

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

WIRTGEN AMERICA, INC.,
Petitioner,

v.

CATERPILLAR INC.,
Patent Owner.

IPR2022-01395
Patent 7,523,995 B2

Before BARRY L. GROSSMAN, JAMES J. MAYBERRY, and
MATTHEW S. MEYERS, *Administrative Patent Judges*.

MAYBERRY, *Administrative Patent Judge*.

DECISION
Granting Institution of *Inter Partes* Review
35 U.S.C. § 314

I. INTRODUCTION

A. *Background and Summary*

Wirtgen America, Inc. (“Petitioner”), filed a Petition requesting *inter partes* review of claims 1–15, 17–33, 35–42, 44–61, and 63 (the “Challenged Claims”) of U.S. Patent No. 7,523,995 B2 (Ex. 1001, the “’995 patent”). Paper 2 (“Pet.”), 1. Caterpillar Inc. (“Patent Owner”) filed a Preliminary Response to the Petition. Paper 7 (“Prelim. Resp.”).

We have authority to determine whether to institute an *inter partes* review. 35 U.S.C. § 314 (2018); 37 C.F.R. § 42.4(a) (2021) (permitting the Board to institute trial on behalf of the Director). To institute an *inter partes* review, we must determine that the information presented in the Petition shows “a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” 35 U.S.C. § 314(a). For the reasons set forth below, upon considering the current record, we institute an *inter partes* review.

B. *Real Parties-in-Interest*

Petitioner identifies Wirtgen America, Inc. and Wirtgen GmbH as the real parties-in-interest. Pet. 95. Patent Owner identifies Caterpillar Inc. as the real party-in-interest. Paper 4, 1.

C. *Related Matters*

The parties each identify the following district court litigation as a matter related to the ’995 patent: *Wirtgen America Inc. v. Caterpillar Inc.*, Case No. 1:17-cv-00770 (D. Del.). Pet. 96; Paper 4, 1. Patent Owner also identifies the following *inter partes* review cases as matters related to the ’995 patent: IPR2022-01394, IPR2022-01396, and IPR2022-01397. Paper 4, 1.

D. The '995 Patent

The '995 patent, titled “Milling Machine,” issued on April 28, 2009, from application number 11/180,688. Ex. 1001, codes (54), (45), (21). The '995 patent ultimately claims priority to a foreign application, Italian Patent Application No. TO2004A0499, filed on July 15, 2004. *Id.* at code (30).

The '995 patent relates to “work machines for the treatment of roadway surfaces, and more particularly to a road planer or milling machine.” Ex. 1001, 1:5–6. Figure 1 is illustrative and is reproduced below.

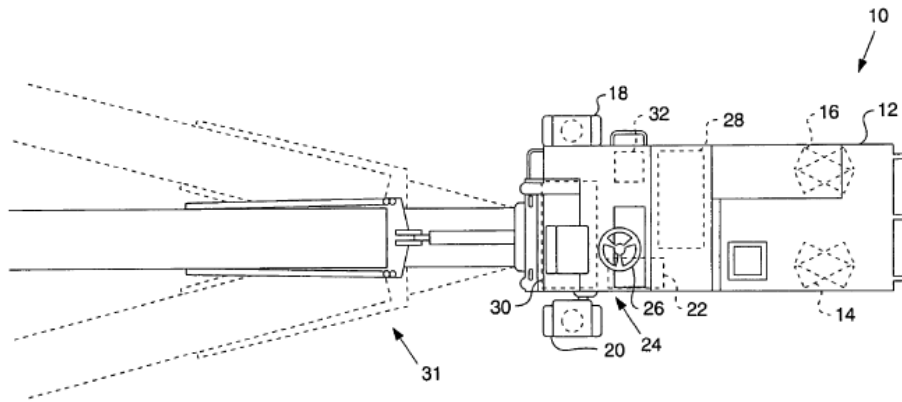


Figure 1 of the '995 patent depicts a top plan view of a self-propelled work machine. Ex. 1001, 3:26–28, 3:43–44, Fig. 1. As shown, self-propelled work machine 10 includes machine frame 12 supportable by front ground engaging units 14 and 16, and rear ground engaging units 18 and 20. *Id.* at 3:43–48. “[R]ight rear ground engaging unit 20 . . . may be pivotable between a projecting position as shown in solid lines in F[igure] 1 and a retracted position in which the one ground engaging unit 20 is positioned within the frame 12 as indicated by the recess 22 shown in hidden lines.” *Id.* at 3:51–56.

Figures 2 through 4 illustrate an exemplary embodiment of the '995 patent. Ex. 1001, Figs. 2–4; *see id.* at 4:38–44. Figure 2 is reproduced below.

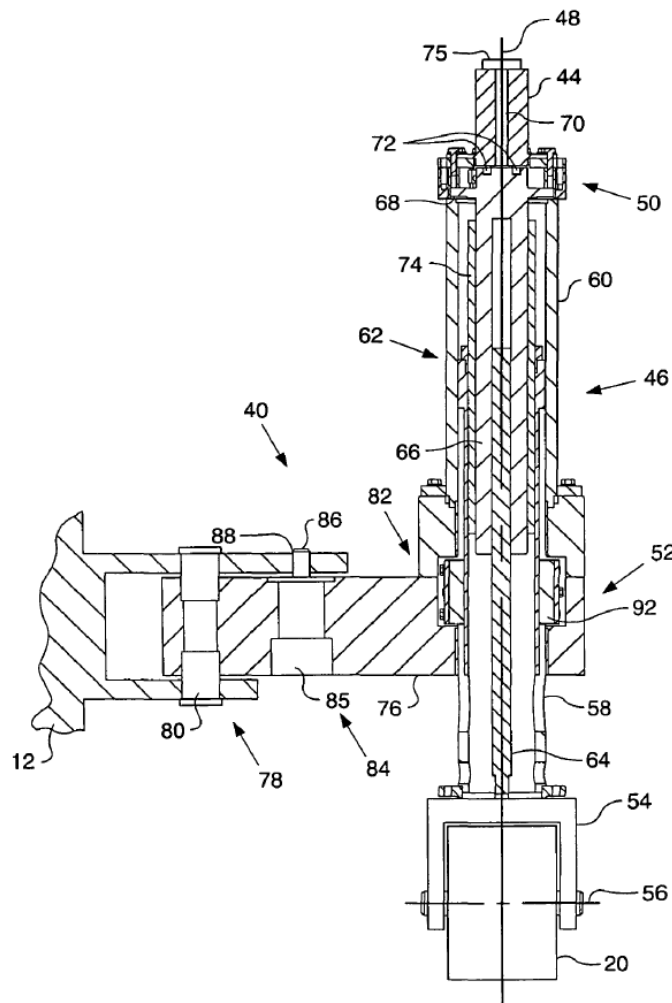
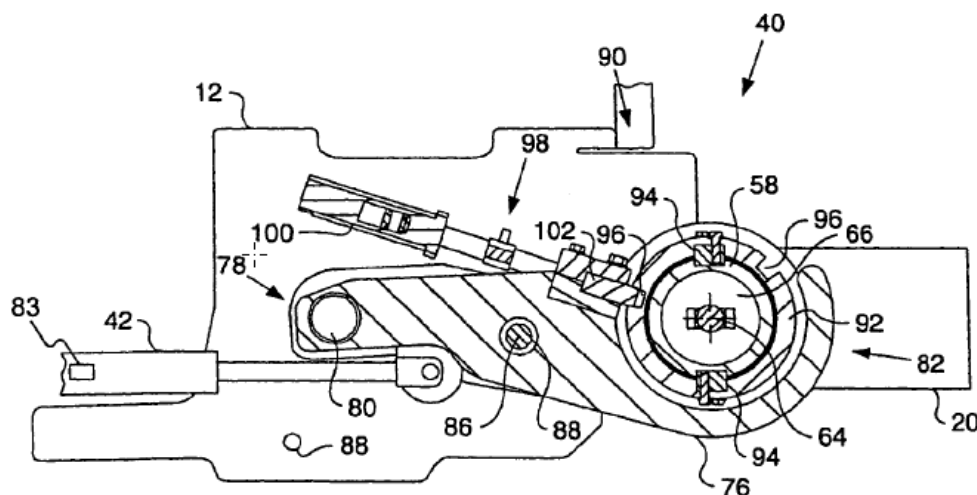


Figure 2 of the '995 patent depicts a partially sectioned longitudinal view of a detail of the work machine shown in Figure 1, referred to as “a cold planer.” Ex. 1001, 3:29–31, Fig. 2. As shown, “work machine 10 includes . . . support device 40 connected between the machine frame 12 and the one ground engaging unit 20”; “first actuator 42 is connected to the support device 40 and is adapted to move the one ground engaging unit 20 between

the projecting . . . and the retracted position . . . relative to . . . frame 12”; “second actuator 44 is associated with . . . support device 40 and . . . adapted to maintain the same rotational direction of the one ground engaging unit 20 in each of the projecting and retracted positions”; “controller 32 . . . is adapted to coordinate the actuation of . . . actuators 42, 44”; “support device 40 includes . . . lifting column 46 adapted to controllably raise and lower the associated connected ground engaging unit 20 relative to the machine frame 12”; and “second actuator 44 is connected to . . . lifting column 46 and . . . adapted to cause . . . a portion of . . . lifting column 46 to rotate about . . . lifting column axis 48,” which “is oriented generally vertically relative to . . . work machine 12.” *Id.* at 4:38–60.

“When flush milling is desired, for example, along a curb or close to a wall, the operator may choose to move the one ground engaging unit 20 to the retracted position relative to the machine frame 12.” Ex. 1001, 7:56–59. Figure 3 is illustrative and reproduced below.



1. A self-propelled machine, comprising:

a machine frame supportable by a plurality of ground engaging units;

a support device connected between said machine frame and at least one of said ground engaging units, the support device including a lifting column having a lifting column axis oriented generally vertically relative to the machine frame, the lifting column being configured to controllably raise and lower said at least one ground engaging unit relative to the machine frame;

a first actuator connected to said support device and located at a lower portion of the lifting column, and adapted to move said at least one ground engaging unit between projecting and retracted positions relative to said machine frame;

a second actuator associated with said at least one ground engaging unit, wherein the second actuator is a rotary actuator located at an upper portion of the lifting column spaced apart from the first actuator along the lifting column axis, and adapted to cause at least a portion of the lifting column to rotate about the lifting column axis and to maintain the same rotational direction of said at least one ground engaging unit in each of said projecting and retracted positions; and

a controller associated with and adapted to coordinate the actuation of said first and second actuators.

Ex. 1001, 9:62–10:21.

18. A self-propelled machine, comprising:

a machine frame supportable by a plurality of ground engaging units;

a support device connected between said machine frame and at least one of said ground engaging units, said support device including a lifting column having a lifting column axis and being adapted to controllably raise and lower said at least one ground engaging unit about said axis relative to said machine frame;

a first actuator connected to said support device and adapted to move said at least one ground engaging unit between

projecting and retracted positions relative to said machine frame;
and

a second actuator connected to said lifting column and adapted to cause at least a portion of said lifting column to rotate about said lifting column axis relative to said machine frame, said second actuator being positioned at a location linearly spaced apart from said first actuator along said lifting column axis.

Id. at 11:34–52.

36. A method of controlling a pair of actuators connected to a controller, at least one of said actuators being a rotary actuator, to selectively position one of a plurality of ground engaging units connected to a respective lifting column having a lifting column axis and supporting a frame of a self-propelled machine, comprising:

raising said one ground engaging unit with said lifting column until said one ground engaging unit is free from engagement with the ground;

actuating a first one of said actuator pair to move said one ground engaging unit from one to the other of said projecting and retracted positions relative to said machine frame;

actuating a second one of said actuator pair to rotate said one ground engaging unit about said lifting column axis in a manner coordinated with the actuation of said first actuator to maintain the same rotational direction of said ground engaging unit in each of said projecting and retracted positions wherein said first one of said actuator pair and said second one of said actuator pair are positioned at locations spaced apart axially along said lift column axis; and

lowering said one ground engaging unit with said lifting column until said one ground engaging unit is again in frame supporting engagement with the ground.

Id. at 13:7–31.

45. A self-propelled machine, comprising:

a machine frame supportable by a plurality of ground engaging units;

support means for supporting said machine frame, said support means being connected to said machine frame and including a generally vertically oriented lifting column having a lifting column axis and being connected to at least one of said ground engaging units;

first actuatable means for moving said at least one ground engaging unit between projecting and retracted positions relative to said machine frame;

second actuatable means for rotating said at least one ground engaging unit to maintain the same rotational direction of said at least one ground engaging unit in each of said projecting and retracted positions, said second actuatable means being positioned at a location spaced apart from said first actuatable means along an axis of said lifting column; and controller means for coordinating the actuation of said first and second actuatable means.

Id. at 14:31–50.

F. Prior Art and Asserted Grounds

Petitioner asserts that the Challenged Claims are unpatentable based on three grounds:

Claims Challenged	35 U.S.C. §	References/Basis
18–20, 29–31, 33	103(a)	Bitelli, ¹ Feliz ²
1–9, 11–15, 17, 21–27, 32, 35–40, 42, 44–55, 57–61, 63	103(a)	Bitelli, Feliz, Skotnikov ³
10, 28, 41, 56	103(a)	Bitelli, Feliz, Skotnikov, McColl ⁴

Pet. 17–18.

Petitioner relies on the declaration testimony of Cameron Orr (Ex. 1003) in support of these grounds.

The following subsections provide brief descriptions of the asserted prior art references.

1. Bitelli (Ex. 1011)

Bitelli, titled “Scarifying machine with Re-Entering Back Wheels,” published May 17, 2000. Ex. 1011, codes (54), (43). Bitelli relates to “a scarifying machine for soil removal in which the shift operation of the back wheels from the projecting position to the re-entering position with respect to the frame is made in an automatized way.” *Id.* ¶ 11. Figure 1 of Bitelli is reproduced below.

¹ Bitelli, EP 1001088 A2; published May 17, 2000 (Ex 1011, “Bitelli”).

² Feliz, US 4,167,826; issued Sept. 18, 1979 (Ex. 1012, “Feliz”).

³ Skotnikov et al., US 6,311,795 B1; issued Nov. 6, 2001 (Ex. 1008, “Skotnikov”).

⁴ McColl, US 4,237,994; issued Dec. 9, 1980 (Ex. 1010, “McColl”).

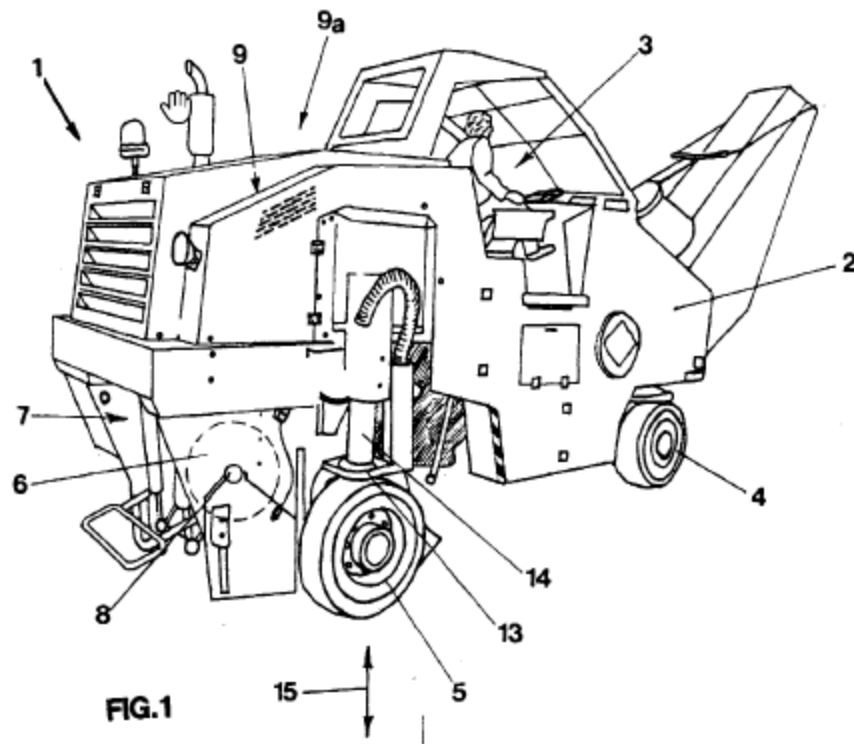


Figure 1 of Bitelli depicts a scarifier in an axonometric view. Ex. 1011 ¶ 17. As shown, scarifying machine 1 has, for example, frame 2, in which there is driving place 3, front wheel 4 and back wheel 5, and hydraulic jack 14 connected to wheel 5 for lifting and lowering the machine. *Id.* ¶¶ 18, 23, claim 8. Back wheel 5 is supported by articulation unit 10. *Id.* ¶ 21.

Figures 2 and 3 of Bitelli are reproduced below.

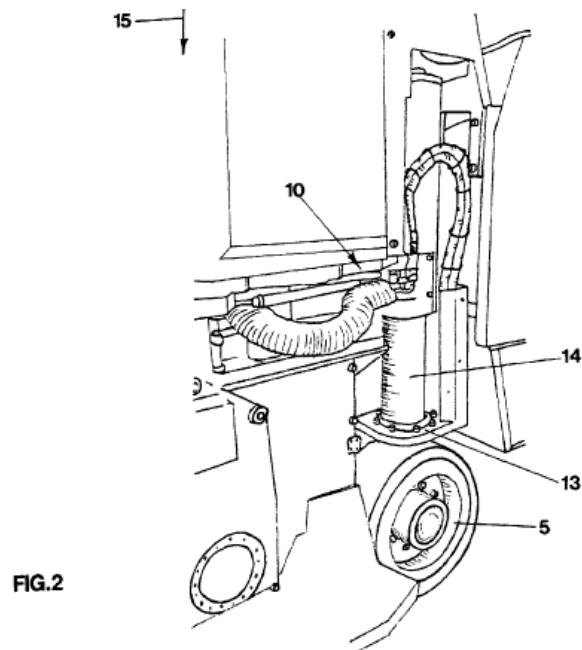


Figure 2 of Bitelli depicts a detail of the scarifying machine 1. Ex. 1011 ¶ 17. As shown, articulation unit 10 is fixed to frame 2 of scarifying machine 1 and connected to plate 13 supporting back wheel 5 via hydraulic jack 14. *Id.* ¶¶ 22–23.

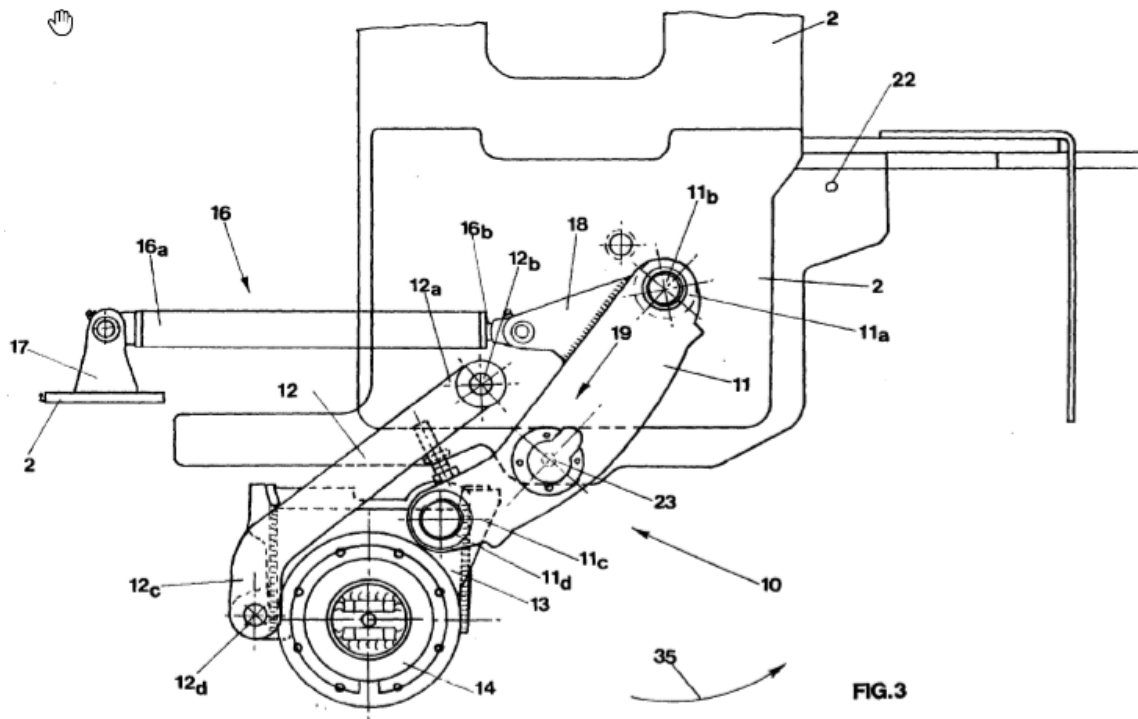


Figure 3 of Bitelli depicts a top view of a detail of the scarifying machine. Ex. 1011 ¶ 17. As shown, articulation unit 10 cooperates with a first actuator 16—for example, a hydraulic cylinder—“to shift said articulation unit 10 in order to place the respective wheel 5 from a position laterally projecting from said frame 2 to a position re-entering with respect to the frame 2 and vice versa.” *Id.* ¶¶ 24, 25. Bitelli describes that “[w]hen the oil under pressure flowing in the pipe . . . reaches the first hydraulic ram 16, it causes the release of the said first hydraulic ram 16 from the stem 16a . . . , forcing the articulation unit to rotate according to the counterclockwise direction shown by the arrow 35 in fig. 3.” *Id.* ¶ 36. Accordingly, Figure 3 of Bitelli shows back wheel 5 in the laterally projecting position, whereas Figure 4, reproduced below, shows back wheel 5 having been rotated to an intermediate position.

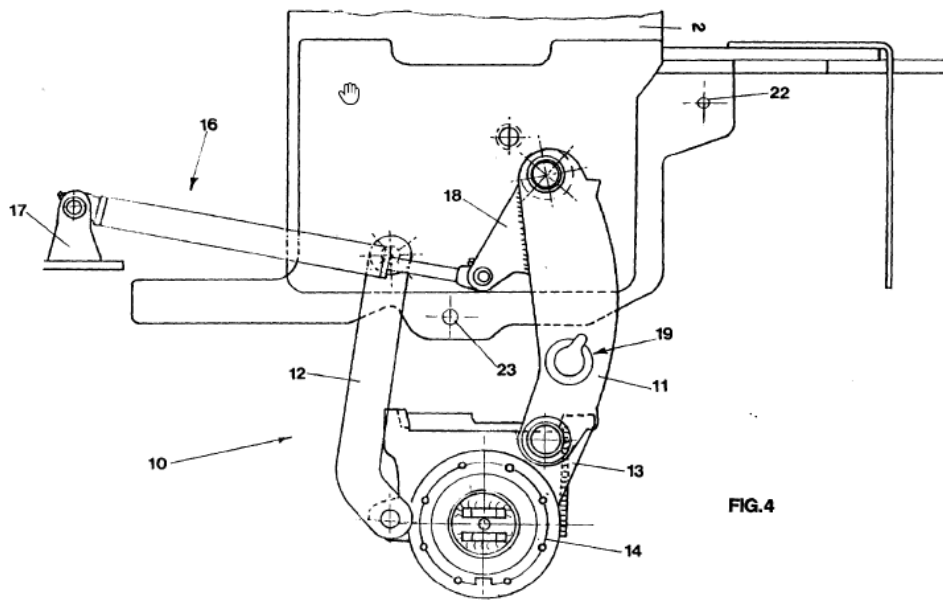


Figure 4 of Bitelli depicts back wheel 5 in an intermediate position, with the first arm 11 and second arm 12 extended from frame 2. Ex. 1011 ¶ 37.

Figure 5 of Bitelli, reproduced below, shows back wheel 5 rotated to its final, re-entering position.

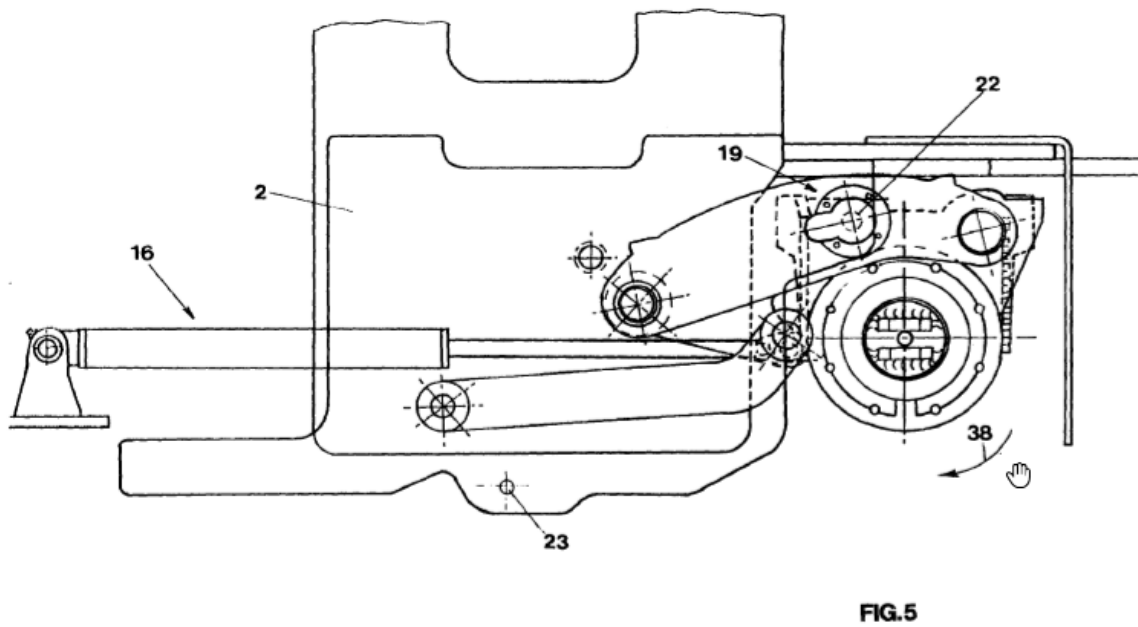


Figure 5 of Bitelli depicts back wheel 5 locked in a final, re-entering position. Ex. 1011 ¶¶ 17, 24, 37. “[A]rticulation unit 10 is made [to] rotate according to the clockwise direction as shown in [Figure] 5 by the arrow 38 when the oil under pressure . . . acts in the first hydraulic ram 16 making the stem 16a re-enter according to the direction shown by the arrow 40.” *Id.* ¶ 41, Fig. 9.

Bitelli’s “articulation unit includes also second actuator means making the articulation unit fixed with respect to the machine frame when the respective wheel is placed in a projecting position or in a re-entering position with respect to the frame.” Ex. 1011 ¶ 15.

Figure 6 of Bitelli is illustrative and reproduced below.

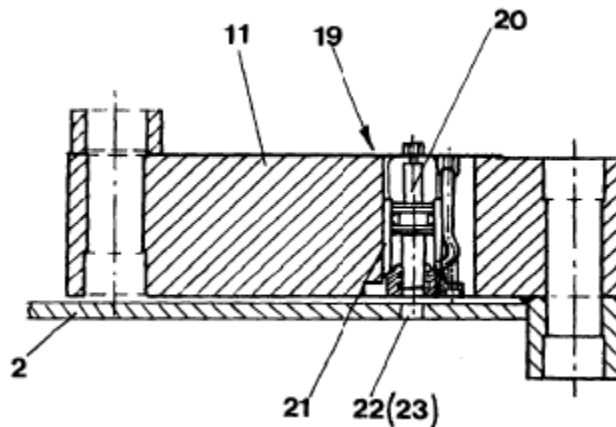


Figure 6 of Bitelli depicts a second actuator of the scarifying machine. Ex. 1011 ¶¶ 17, 26–29. As shown, Bitelli’s “second actuator . . . consist[s] in a second hydraulic cylinder 19,” which is “formed substantially by a stem 20 . . . coupled in a sliding way to the inside of a cylindrical seat 21 included in the body of the first arm 11.” *Id.* ¶ 26. The “stem 20 is suitable to be housed in respective holes 22, 23 included in the frame.” *Id.*

Figure 8 of Bitelli is reproduced below.

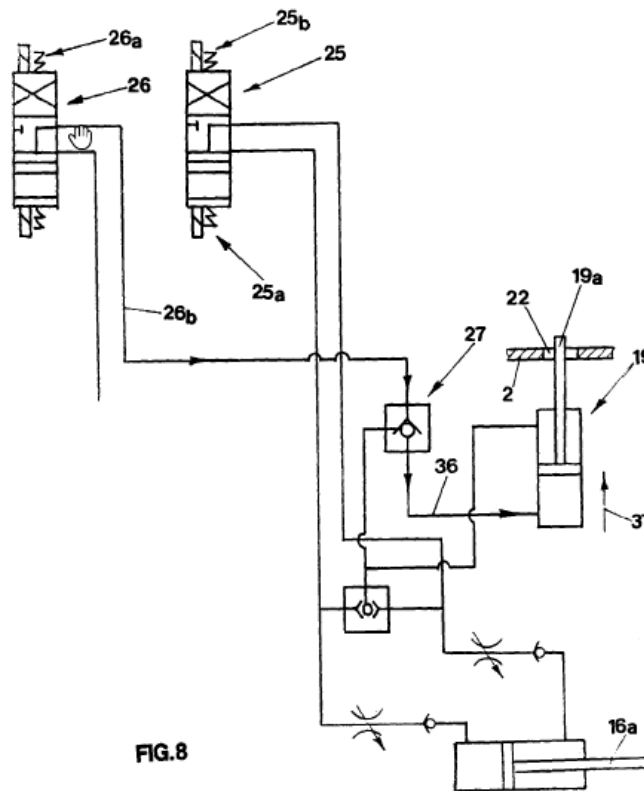


Figure 8 of Bitelli depicts the drive and shifting hydraulic circuit of the scarifying machine's back wheels 5 in one configuration. Ex. 1011 ¶ 17. As shown, “oil under pressure . . . feeds the second hydraulic ram 19 whose stem 19a is shifted . . . into the hole 22 of the frame 2 granting the locking of the articulation unit 10 and of the wheel 5, integral with it, in the entering position.” *Id.* ¶ 39.

Figure 7 of Bitelli is reproduced below.

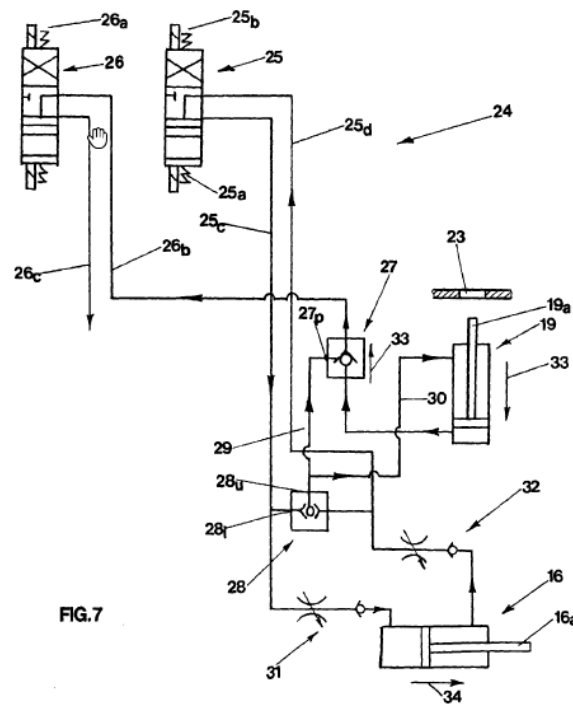


Figure 7 of Bitelli depicts the drive and shifting hydraulic circuit of the scarifying machine's back wheels 5 in another configuration. Ex. 1011 ¶ 17. As shown, “oil under pressure, acting . . . on the second hydraulic ram 19, shifts the stem 19a of the said second hydraulic ram 19 . . . [,] releasing it from the hole 23 made on the frame 2,” such that “[t]he articulation unit 10 is therefore free to move with respect to the frame 2.” *Id.* ¶¶ 35, 36.

2. *Feliz (Ex. 1012)*

Feliz, titled “Self-Loading Dualistic Earth Excavator with Connecting Telescopic Conveying and Dualistic Distribution Means,” issued September 18, 1979. Ex. 1012, codes (54), (45).

Feliz “relates to the improvement of a self-loading earth excavating, conveying and distribution vehicles, normally associated with cut and fill

construction of highways and earth dams, open pit mining and the like.” *Id.* at 1:17–21. Figure 1 of Feliz is reproduced below.

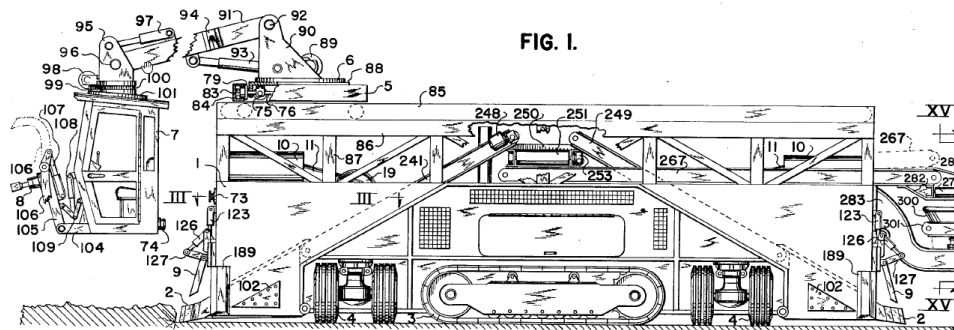


Figure 1 of Feliz depicts a side view of a dualistic earth excavation vehicle. Ex. 1012, 5:31–35. As shown, vehicle 1 includes four pairs of auxiliary drive wheels 4 connected to the frame of the vehicle by way of joints, shafts, and housings. *Id.* at 7:62–8:2; *see id.* at 8:12–9:46.

Figure 4 of Feliz is reproduced below.

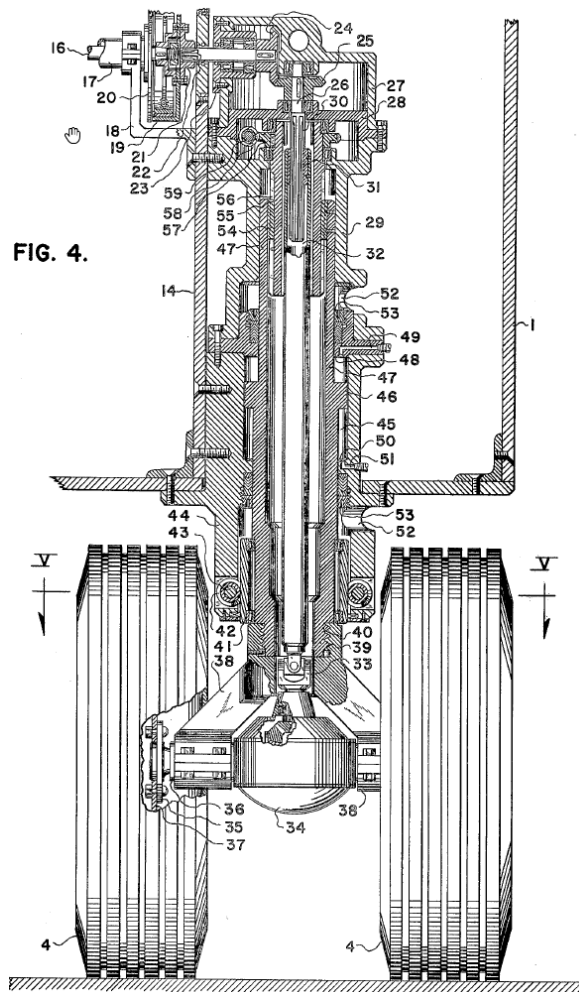


Figure 4 of Feliz provides a more detailed view of the auxiliary wheel drive, steering, and jack mechanisms. Ex. 1012, 5:48–51. Notably, Figure 4 shows upper and lower gear covers 27 and 28 secured to upper pedestal housing 29, which is secured to wing wall 14 along with lower pedestal housing 44. *Id.* at 8:21–24, 8:40–41. “[D]rive shaft 32 freely extends or retracts on shaft 26,” and its lower portion is connected by universal joint 33 to conventional differential 34. *Id.* at 8:26–29. Conventional differential 34 is provided with shortened conventional drive shafts 35 secured to wheel rims 37, which drive the wheels 4. *Id.* at 8:31–33. “The jack means . . .

comprises an extensible jack device including a vertical cylinder 45 containing a reciprocable piston 46 having its upper piston skirt 47 extending upwardly through the top cylinder head 48, the latter is provided with a fluid conducting passage 49 with which a liquid supply communicates.” *Id.* at 8:45–51. “[W]hen liquid under pressure is supplied to the lower end of the cylinder bore, the piston 46 may be moved upwardly to retract the drive wheels, thus lowering the vehicle with attached cutterheads 2 and tractor belts 3,” whereas “when liquid under pressure is supplied to the upper cylinder bore through the fluid passage 49, the piston 46 may be moved downwardly until the drive wheels are in ground engagement.” *Id.* at 8:55–63. And by “continuing to apply fluid pressure, the vehicle 1 cutterheads 2 and tractor belts 3 may be raised above ground engagement for highway travel, lateral travel or travel in any other direction desired by the auxiliary drive wheel means.” *Id.* at 8:63–8:67.

Figure 4 of Feliz also shows that “[t]he upper portion of the piston skirt 47 has a splined sleeve 54 secured therein,” which “is slidingly engaged at 55 with the splined tubular steering shaft 56.” Ex. 1012, 9:2–5. Steering shaft 56 “is suitably journaled in bearings supported by the upper pedestal housing 29 and the gear cover 28” and “has a worm gear 57 keyed thereto,” which “is driven by the worm 58.” *Id.* at 9:5–9. Worm 58 “is keyed to the horizontal steering shaft 59,” which is “suitably journaled in bearings supported by the pedestal housing 29 and the gear cover 28.” *Id.* at 9:9–12. “The foregoing arrangement permits the piston skirt 47 to extend or retract with the jack means while simultaneously providing a steering means to direction orient the drive wheels 4 in a 360 degree arc” while

“simultaneously transmitting propulsion power to the drive wheels 4.” *Id.* at 9:12–17.

Figure 3 of Feliz is reproduced below.

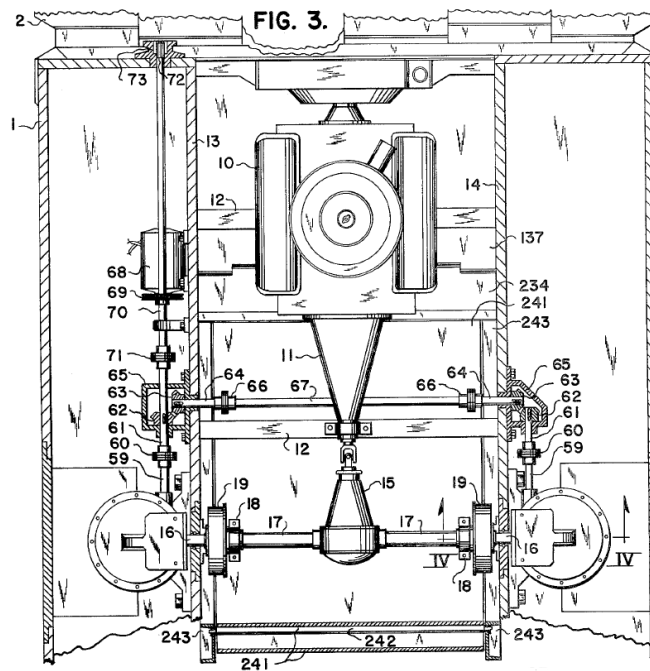


Figure 3 of Feliz depicts a horizontal section of the dualistic earth excavation vehicle illustrating the propulsion and steering power trains of the forward auxiliary drive wheel assembly. Ex. 1012, 5:39–42. As shown, “horizontal steering shaft 59 is driven by flexible coupling 60 in turn driven by shaft 61 in turn having keyed thereto a bevel gear 62, meshing with bevel gear 63 in turn having its hub keyed to the shaft 64.” *Id.* at 9:19–24. “The shafts 61 and 64 are suitably journaled in bearings supported by the gear housing 65,” and “[a] pair of flexible couplings 66 are connected by the transverse shaft 67 thereby connecting the steering means of both forward drive wheel assemblies.” *Id.* at 9:24–28. “The power and hand steering sources are communicated to the . . . steering means,” “the motor 68 drives suitable sprockets and chain 69 . . . drives the shaft 70,” which “is connected

to the flexible coupling 71” that “transmits steering power to the . . . steering mechanism.” *Id.* at 9:28–34.

3. *Skotnikov (Ex. 1008)*

Skotnikov, titled “Work Vehicle Steering and Suspension System,” issued November 6, 2001. Ex. 1008, codes (54), (45). Skotnikov “relates . . . to a work vehicle steering system for off-road work vehicles.” *Id.* at 1:5–8. Figure 1 of Skotnikov is reproduced below.

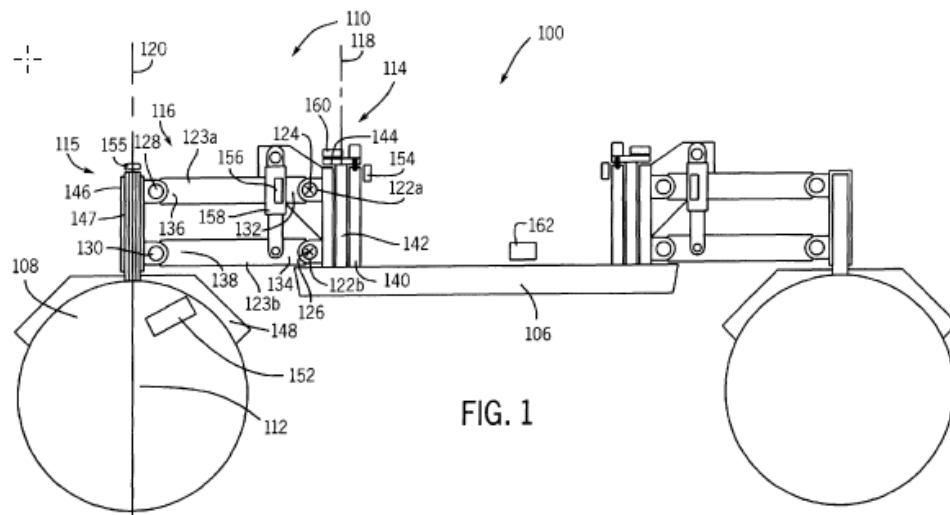


Figure 1 of Skotnikov is an aside view of a chassis of a work vehicle having a steering and suspension system. Ex. 1008, 2:22–24. As shown, “chassis 100 includes a frame 106 coupled to four wheel assemblies 108 via four similar suspension/steering coupling assemblies 110.” *Id.* at 2:57–59. One coupling assembly 110 includes rotatable assemblies 114, 115, and 116. *Id.* at 3:17–18. Rotatable assemblies 114 and 115 can include helical rotary actuators, such as a hydraulic cylinder, and can be configured to rotate an axle or shaft within sleeves 140 and 146, respectively. *Id.* at 3:35–49, 3:53–55.

Figure 6 of Skotnikov is reproduced below.

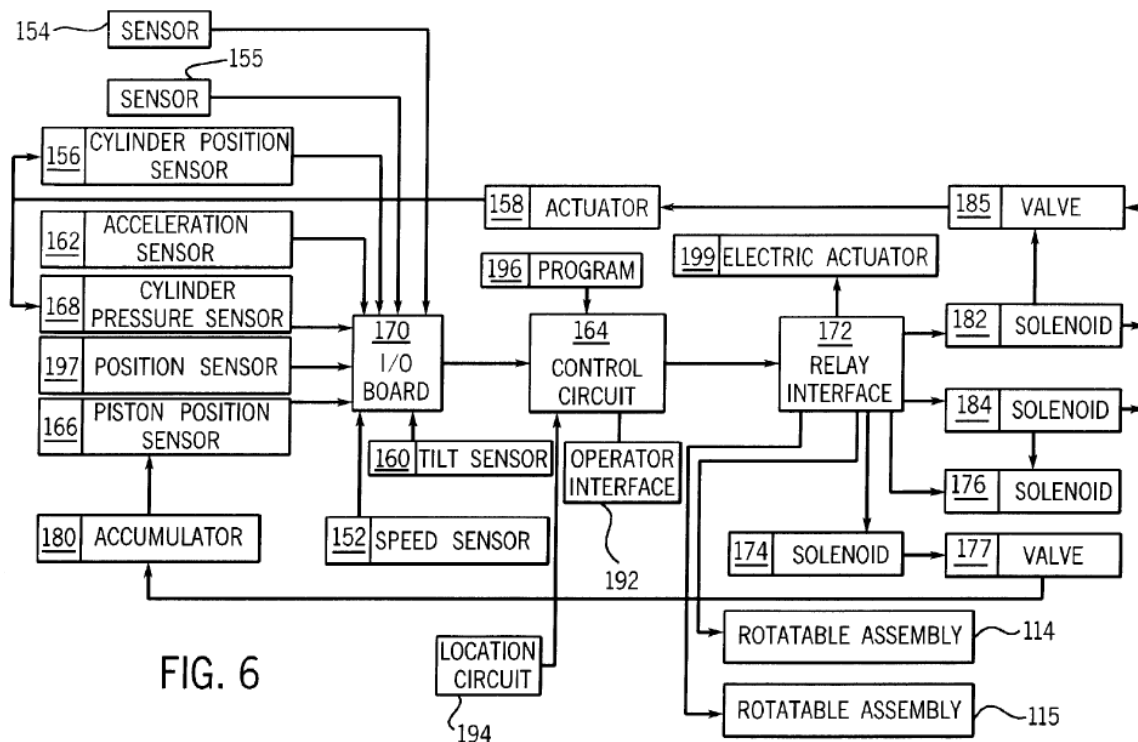
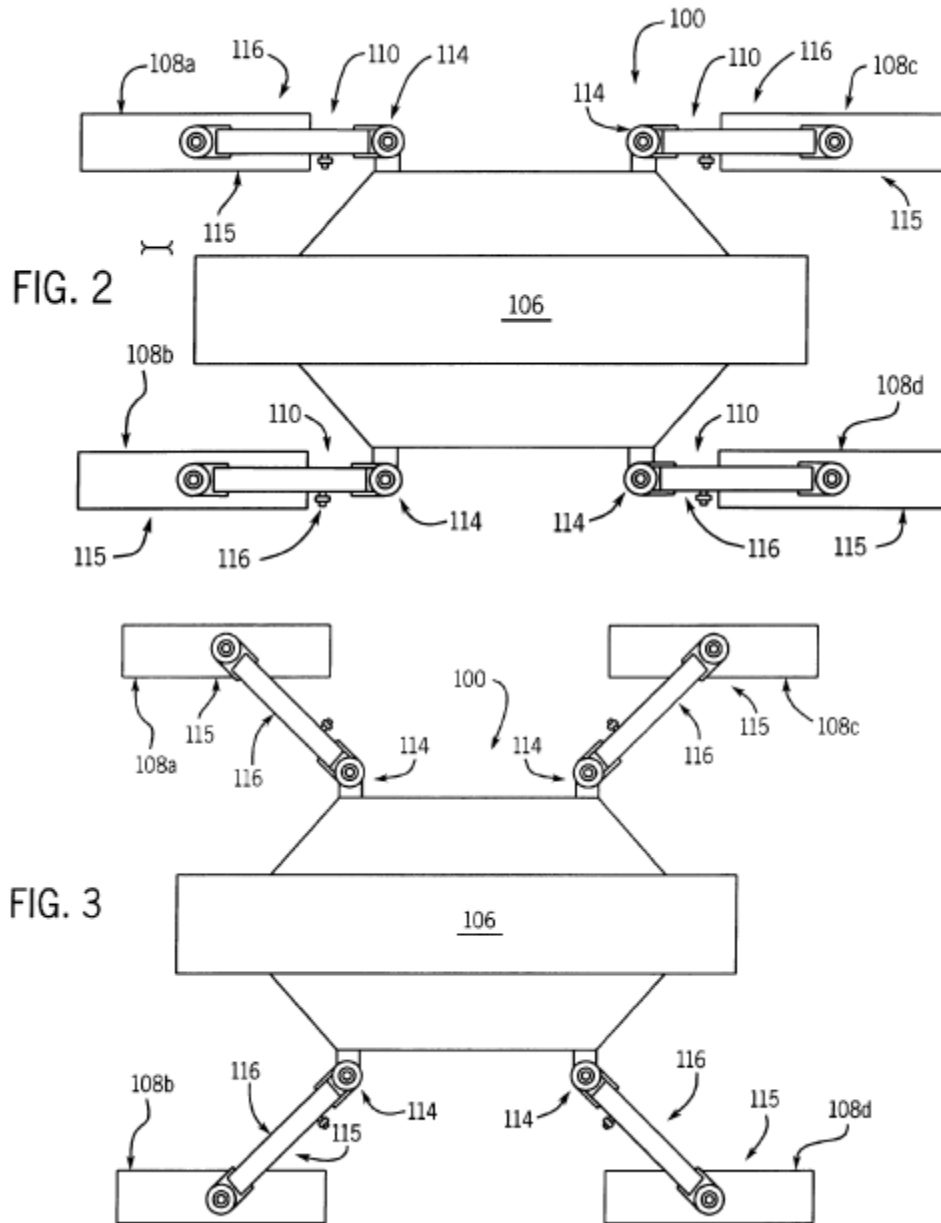


Figure 6 of Skotnikov depicts the control circuit for the steering and suspension system. Ex. 1008, 2:34–35. As shown, control circuit 164—through the use of a relay interface 172, sensors 152, 154, 155, 156, 160, 162, 166, 168, and 197 and actuator solenoids 174, 176, 182, and 184—is operative to provide control signals to rotatable assemblies 114 and 115 in order to steer wheel assemblies 108. *Id.* at 4:46–48, 4:62–67. In one embodiment, “[c]ontrol circuit 164 is configured to lower frame 106 via coupling assemblies 110 by enabling solenoid 182,” which “actuates valve 185 to remove hydraulic oil from actuator 158,” which then “retracts, providing a decreased distance between sleeve 140 and lever 123*b* to move frame 106 downward relative to wheel 108.” *Id.* at 7:52–57.

Control circuit 164 may also be configured to provide control signals to rotatable assemblies 114 and 115 to adjust the distance between wheels

108a, 108b, 108c, and 108d. *Id.* at 5:2–4. This wheel width adjustment can be seen in Figures 2 and 3, which are reproduced below.



Figures 2 and 3 of Skotnikov depict wheel assemblies 108 with narrow and wider widths, respectively. Ex. 1008, 5:19–21.

4. *McColl (Ex. 1010)*

McColl, titled “Independent Steering and Propulsion System for Off Road Vehicle,” issued December 9, 1980. Ex. 1010, codes (54), (45). McColl “relates to self-propelled vehicles used primarily to transport long loads across roadless terrain.” *Id.* at 1:15–17. McColl describes a vehicle including “modular front and rear wheel assemblies,” each having “an electrical or hydraulic actuator . . . to impart individually controlled steering movements to the particular wheel.” *Id.* at 1:29–30, 1:62–64. McColl’s vehicle further includes a “steering control system” with “a turn angle sensor . . . incorporated in the steering linkage for each wheel to continuously generate a signal proportional to the turning angle of such wheel.” *Id.* at 6:29–32, 6:34–35. Notably, McColl’s control system includes “a microprocessor 204 to control respectively the turn angle of the vehicle,” where “sensor signals” “respectively proportional to the rotational velocity of the wheel and to the angle of turn of the particular wheel” “are inputs to [the] microprocessor.” *Id.* 1:64–1:68, 6:34–43. McColl also describes that its “microprocessor can be programmed to cause the vehicle to turn according to the Ackerman[n] principle.” *Id.* at 2:18–24; *see also id.* at 7:12–24, 8:53–62.

II. ANALYSIS OF PETITIONER’S CHALLENGES

A. *Applicable Law*

Petitioner’s asserted grounds of unpatentability are based on obviousness under 35 U.S.C. § 103.

Section 103(a) forbids issuance of a patent when “the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been

obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.”

KSR Int’l Co. v. Teleflex Inc., 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations, including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) when available, objective evidence, such as commercial success, long felt but unsolved needs, and failure of others. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

The Supreme Court made clear that we apply “an expansive and flexible approach” to the question of obviousness. *KSR*, 550 U.S. at 415. Whether a patent claiming the combination of prior art elements would have been obvious is determined by whether the improvement is more than the predictable use of prior art elements according to their established functions. *Id.* at 417. “[O]bviousness must be determined in light of *all the facts*, and . . . a given course of action often has simultaneous advantages and disadvantages, and this does not necessarily obviate motivation to combine” teachings from multiple references. *Medichem, S.A. v. Rolabo, S.L.*, 437 F.3d 1157, 1165 (Fed. Cir. 2006) (emphasis added); *see also PAR Pharm., Inc. v. TWI Pharms., Inc.*, 773 F.3d 1186, 1196 (Fed. Cir. 2014) (“The presence or absence of a motivation to combine references in an obviousness determination is a pure question of fact.”).

B. Level of Ordinary Skill in the Art

The level of skill in the art is “a prism or lens” through which we view the prior art and the claimed invention. *Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001). Petitioner contends “[a] POSITA in the field of the ’995 patent (mobile construction machines) would have had knowledge

of the literature concerning machine design, including hydraulic systems and their use to steer and position wheels/tracks, before July 2004.” Pet. 15–16 (citing Ex. 1003 ¶¶ 27–28). Petitioner further contends that

a [person having ordinary skill in the art] would have had: (i) a bachelor’s degree (or equivalent) in mechanical engineering (or a similar field) and at least two years of experience working on mobile construction machine design (or in a similar field); or (ii) seven years of experience working on mobile construction machine design (or in a similar field).

Id. at 16 (citing Ex. 1003 ¶¶ 27–28). Patent Owner does not address the level of ordinary skill in the art at this stage of the proceeding.

For the purposes of this Decision, we apply Petitioner’s definition of the level of ordinary skill in the art. We determine that this definition is consistent with the prior art of record and the skill reflected in the Specification of the ’995 patent, based on our review of the limited record.

C. *Claim Construction*

In *inter partes* reviews, we interpret a claim “using the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. 282(b).” 37 C.F.R. § 42.100(b). Under this standard, we construe the claim “in accordance with the ordinary and customary meaning of such claim as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent.” *Id.*

Independent claim 45 uses “means-plus-function” language, reciting several such clauses. Ex. 1001, 14:31–50; *see* 35 U.S.C. § 112, ¶ 6 (we cite to the pre-AIA version of the statute applicable to the challenged claims). Means-plus-function claiming occurs when a claim term is drafted in a manner that invokes 35 U.S.C. § 112, ¶ 6, which states:

An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

See 35 U.S.C. § 112, ¶ 6; *Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1347 (Fed. Cir. 2015) (en banc).

On the record before us, we have not been directed to any dispute between the parties whether § 112, ¶ 6 applies to the recited means-plus-function clauses in the Challenged Claims.

Where claim language may be construed according to 35 U.S.C. § 112(f) (or its predecessor, § 112, ¶ 6), a petitioner must provide a construction that includes both the claimed function and the specific portions of the specification that describe the structure, material, or acts corresponding to each claimed function. 37 C.F.R. § 42.104(b)(3).

Here, Petitioner asserts that claim 45's recitation of "support means," "first actuatable means," and "second actuatable means" "creat[es] a presumption that these elements should be interpreted under 35 U.S.C. § 112, ¶ 6." Pet. 17. Petitioner states that "[a]s discussed in co-pending Petition IPR2022-01394, claim 45 should be interpreted under 35 U.S.C. § 112, ¶6," but that construction of these terms "is not necessary to resolve the controversy because the applied art discloses all limitations of claim 45, including the corresponding structure disclosed in the '995 patent specification for performing the recited functions." *Id.* According to Petitioner, "[a]ll other claim terms should receive their plain and ordinary meaning, in the context of the '995 patent specification." *Id.* at 16. In other words, Petitioner has not proposed a specific construction for any of the

recited means-plus-function elements,⁵ nor has he identified their corresponding structure or function in the Specification.

Patent Owner argues that the Petition violates Rule 42.104. Prelim. Resp. 6; *see* 37 C.F.R. § 43.204. Specifically, Patent Owner argues that the Petition fails to identify the structure associated with the means-plus-function terms, in accordance with our rules. Prelim. Resp. 6–7. Patent Owner adds that “[t]he petition’s excuse for not providing the required identification of corresponding structure”—that construction of the terms are not necessary to resolve controversy between the parties—“is unavailing.” *Id.* at 7–8. Patent Owner explains that “the petition cannot prove that the applied art discloses ‘the corresponding structure disclosed in the ’995 patent specification’ . . . when the petition never identifies that structure in the first place.” *Id.* at 8 (quoting Pet. 17). Patent Owner concludes that denial is appropriate because of the large number of claims affected by this deficiency. *Id.*

We agree with Patent Owner that Petitioner’s treatment of the means-plus-function limitations in certain Challenged Claims is deficient. Because, however, the majority of Challenged Claims do not include means-plus-function limitations, we do not exercise discretion to not institute for this reason. We do address Petitioner’s deficiency with respect to means-plus-function limitations, below, in our merits-based analysis of claim 45 for Ground 2.

⁵ Claim 45 additionally recites a “controller means”; claim 49 recites a “rotation sensor means”; claim 51 recites a “pivot sensor means”; and claim 61 recites an “anti-swing means.” *See* Ex. 1001, 14:48–50, 14:61–65, 15:4–10, 16:19–23.

Also, we determine that we need not expressly construe any claim terms to resolve the parties’ disputes on the record before us. *See Realtime Data, LLC v. Iancu*, 912 F.3d 1368, 1375 (Fed. Cir. 2019) (“The Board is required to construe ‘only those terms . . . that are in controversy, and only to the extent necessary to resolve the controversy.’”) (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999)). To the extent that the scope of any particular claim term requires discussion, however, we provide it in our assessment of the challenges, which we turn to next.

D. Ground 1: Claims 18–20, 29–31, and 33 as unpatentable over Bitelli and Feliz

Petitioner contends that the combined teachings of Bitelli and Feliz render obvious the subject matter of claims 18–20, 29–31, and 33. Pet. 20–47. Patent Owner disputes Petitioner’s contentions that the proposed combination teaches or suggests the “support device” and “first actuator” elements of claim 18, as well as the proposed motivation to combine Bitelli and Feliz. Prelim. Resp. 26–39. We address Petitioner’s contentions and Patent Owner’s arguments below, beginning with the motivation to combine Bitelli and Feliz.

1. Motivation to Combine Bitelli and Feliz

Petitioner contends that a person having ordinary skill in the art “would have been motivated to connect a steering actuator to Bitelli’s lifting column (hydraulic jack 14), as taught by Feliz, to rotate the inner tube of Bitelli’s lifting column so Bitelli’s rear wheel 5 has steering capability, thereby preventing the rear wheels from scraping the ground during turning.” Pet. 37 (referencing Ex. 1003 ¶¶ 150–153). In addition to

Mr. Orr’s testimony, Petitioner supports its contention with a statement in published European Patent Application EP 1 039 037, by Bitelli S.p.A. (Ex. 1014, “Bitelli ’037”). *Id.*⁶

Mr. Orr testifies that Bitelli ’037 explains that “[o]ne limitation shown by the machine described in the aforementioned patent is that when the rear wheels or tracks are set in their retracted position inside the frame, when turning they scrape the ground with considerable resistance.” Ex. 1003 ¶ 152 (quoting Ex. 1014 ¶ 12). Mr. Orr testifies that a person having ordinary skill in the art “would have known that Bitelli’s right rear wheel resisted the turning motion of the vehicle when set in the retracted position.” *Id.* ¶ 153.

Patent Owner argues that Petitioner does not establish that Bitelli has a wheel scraping problem. Prelim. Resp. 31–32. Patent Owner argues that Petitioner cites to other references without tying these disclosures to Bitelli. *Id.* at 32. With respect to Mr. Orr’s testimony, Patent Owner argues that he “quotes a different Bitelli document (EX1014), but he never explains how this other document informs the [person of ordinary skill’s] understanding of the Bitelli machine applied in the proposed combination.” *Id.* at 33.

With respect to Bitelli ’037, Patent Owner argues that neither Petitioner nor Mr. Orr mention that paragraph 12 of Bitelli ’037, when discussing the wheel scraping problem, references an “aforementioned patent,” identified in paragraph 11 of Bitelli ’037 as “a patent application

⁶ The Petition erroneously references Exhibit 1013 paragraph 12, instead of Exhibit 1014 paragraph 12. *See* Ex. 1014 ¶ 12 (discussing wheel scraping); Ex. 1003 ¶ 150 (discussing motivation to combine Bitelli and Feliz and referencing Exhibit 1014 paragraph 12).

having protocol number VI98U000098.” Prelim. Resp. 33; *see* Ex. 1014 ¶¶ 11–12.

Patent Owner also argues that Petitioner’s proposed modification is not a simple application of Feliz’s teachings, but instead includes “series of freewheeling modifications.” Prelim. Resp. 34; *see also id.* at 35–39 (arguing against the simplicity of Petitioner’s proposed modifications).

We have reviewed Patent Owner arguments and cited evidence and determine, on the current record, that Petitioner provides sufficient arguments and evidence, at this stage of the proceeding, to support its reasoning that a person having ordinary skill in the art would have been motivated to modify Bitelli with Feliz’s teachings on a steering actuator as Petitioner proposes. First, we determine that Petitioner has provided sufficient evidence at this stage of the proceeding that Bitelli ’037 discloses a problem that Bitelli’s machine would encounter. We base this determination, at least in part, on Mr. Orr’s testimony and the similarities in the machines in Bitelli and Bitelli ’037⁷. *Compare* Ex. 1011, Fig. 1, *with* Ex. 1014, Figs. 1–6.

Second, the motivation to combine is a fact-intensive inquiry. At this stage of the proceeding, Patent Owner offers only attorney argument regarding the complexity of the proposed modifications, including no evidence that the proposed modification is beyond the level of ordinary skill in the art. Also, Patent Owner’s criticism of Petitioner’s modification to

⁷ Patent Owner criticizes Petitioner’s reasoning, in part, because Exhibit 1013, to which Petitioner and, sometimes Mr. Orr, cites, does not support Petitioner’s contentions. We do not credit this argument, as we determine that the typographical nature of Petitioner’s citation (Exhibit 1013 instead of Exhibit 1014) is readily apparent.

Feliz’s actuator suggests that Feliz’s teachings is limited to the specific configuration of its actuator, which must be bodily incorporated into Bitelli to arrive at the claimed invention. *See* Prelim. Resp. 37–38. An obviousness analysis is not so constrained. *See, e.g., Allied Erecting & Dismantling Co. v. Genesis Attachments, LLC*, 825 F.3d 1373, 1381 (Fed. Cir. 2016) (“The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference[.]”); *see also In re Mouttet*, 686 F.3d 1322, 1332 (Fed. Cir. 2012) (“It is well-established that a determination of obviousness based on teachings from multiple references does not require an actual, physical substitution of elements.”).

We also determine, on the current record, that Petitioner makes a sufficient showing that a person having ordinary skill in the art would have had a reasonable expectation of success. *See, e.g.,* Pet. 38–39 (“Feliz’s rotary actuator is designed to steer a wheel about a lifting column, such as Bitelli’s lifting column.”), *id.* at 39 (providing additional support).

2. *Independent claim 18*

We now turn our analysis to the scope and content of the prior art and any differences between the prior art and the subject matter of independent claim 18, on a limitation-by-limitation basis.

a) *Preamble*

The preamble of claim 18 recites “[a] self-propelled machine.” Ex. 1001, 11:34. Petitioner contends that each of Bitelli and Feliz discloses a self-propelled machine. Pet. 20–21 (referencing Ex. 1011 ¶ 18; Ex. 1012, 1:16–21, 7:62–8:2; Ex. 1003 ¶¶ 119–121); *see, e.g., id.* at 21 (providing

annotated versions of Bitelli's Figure 1 and Feliz's Figure 1, showing the respective machines).

Upon review of the information in the Petition and corresponding evidence, we determine Petitioner has made a sufficient showing, at this stage of the proceeding, that the combination of Bitelli and Feliz teaches or suggests the subject matter of the preamble. In view of this determination, we need not resolve, at this stage of the proceeding, whether the preamble is limiting.

Patent Owner does not dispute Petitioner's contentions with respect to the preamble at this stage of the proceeding.

b) The machine frame element

Claim 18 recites "a machine frame supportable by a plurality of ground engaging units." Ex. 1001, 11:35–36 (the "machine frame" element of claim 18). Petitioner contends that each of Bitelli and Feliz discloses a machine with a machine frame supportable by ground engaging units. Pet. 22–23 (referencing Ex. 1011 ¶ 18; Ex. 1012, 7:62–8:2, 8:5–11; Ex. 1003 ¶¶ 122–124); *see also id.* at 22 (providing an annotated version of Bitelli's Figure 1, indicating the frame and a ground engaging unit), 23 (providing an annotated version of Feliz's Figure 1, indicating the frame, lifting columns, and wheels).

Upon review of the information in the Petition and corresponding evidence, we determine Petitioner has made a sufficient showing, at this stage of the proceeding, that the combination of Bitelli and Feliz teaches or suggests the subject matter of the machine frame element of claim 18.

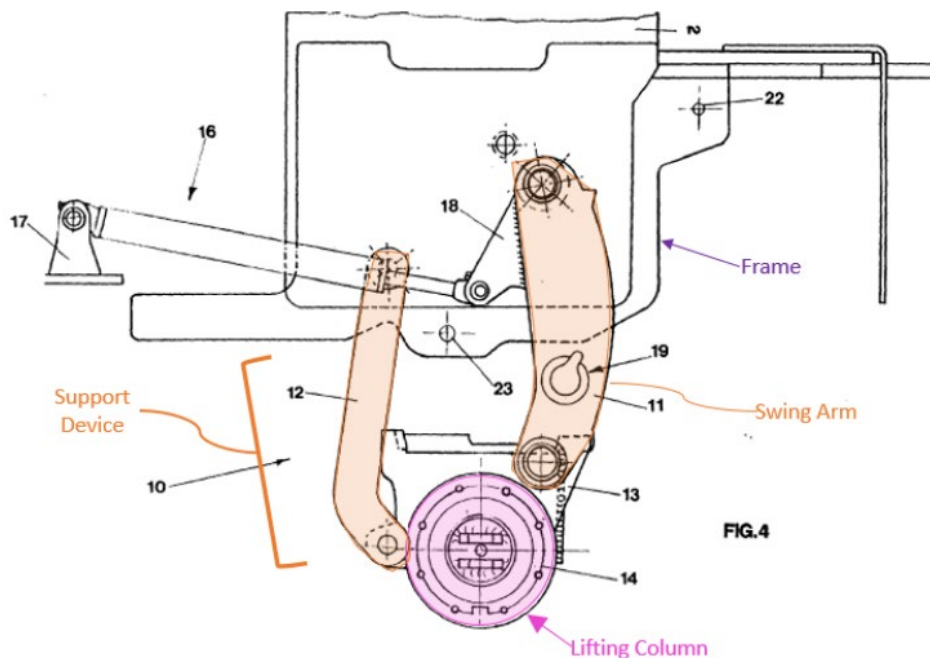
Patent Owner does not dispute Petitioner's contentions with respect to this claim limitation at this stage of the proceeding.

c) The support device element

Claim 18 also recites

a support device connected between said machine frame and at least one of said ground engaging units, said support device including a lifting column having a lifting column axis and being adapted to controllably raise and lower said at least one ground engaging unit about said axis relative to said machine frame.

Ex. 1001, 11:37–42 (the “support device” element of claim 18). Petitioner contends that Bitelli discloses that each back wheel 5 is supported by an articulation unit that includes first arm 11 and second arm 12. Pet. 23 (referencing Ex. 1011 ¶¶ 21–22; Ex. 1003 ¶¶ 125–131). Petitioner concludes that “[t]hus, Bitelli’s articulation unit 10 pivotably connects wheel 5 to frame 2.” *Id.* We reproduce Petitioner’s annotated version of Bitelli’s Figure 4, below.



EX1011, FIG. 4 (annotated).

Pet. 24. Bitelli's Figure 4 depicts details of Bitelli's articulation unit 10. Ex. 1011 ¶ 37. Petitioner adds annotations identifying the lifting column, frame, and arms 11 and 12. Pet. 24. Petitioner contends that Bitelli's hydraulic jack 14 corresponds to the recited lifting column, which "controllably raises and lowers wheel 5 relative to frame 2." *Id.* (referencing Ex. 1003 ¶¶ 125–131); *see also id.* at 24 (providing an annotated version of Bitelli's Figure 1, identifying a ground engaging unit, lifting column, and how the structure pivots between projected and retracted positions).

Patent Owner argues that "[t]he petition separately argues that Bitelli discloses a support device and a lifting column, but it never explains how the art teaches a support device that 'includ[es] a lifting column having a lifting column axis.'" Prelim. Resp. 27. Patent Owner argues that Petitioner identifies components of the support device and, separately, identifies the lifting column, but "never even attempts to show that the purported support device *includes* a lifting column." *Id.*

We have considered Patent Owner's arguments and determine that Petitioner has made a sufficient showing, at this stage of the proceeding, that Bitelli discloses the recited support device. The information in the Petition at pages 23 and 24, including the annotated version of Figure 4, identifies the components of the support device, and specifically calls out the lifting column. The annotated figure shows cross-hairs depicting the axis of the column. Pet. 24; *see also id.* at 25 (showing an annotated version of Bitelli's Figure 1, showing the lifting column aligned with the center of wheel 5, indicating that the lifting column raises and lowers the wheel along the axis of the lifting column relative to the machine frame); Ex. 1011 ¶ 23 ("An hydraulic jack 14 connects the plate 13 to the frame 2 and allows the lifting

and the lowering of the machine according to the directions of the arrow 15 in order to adjust the milling depth of the drum 6.”) (referenced at Pet. 24).

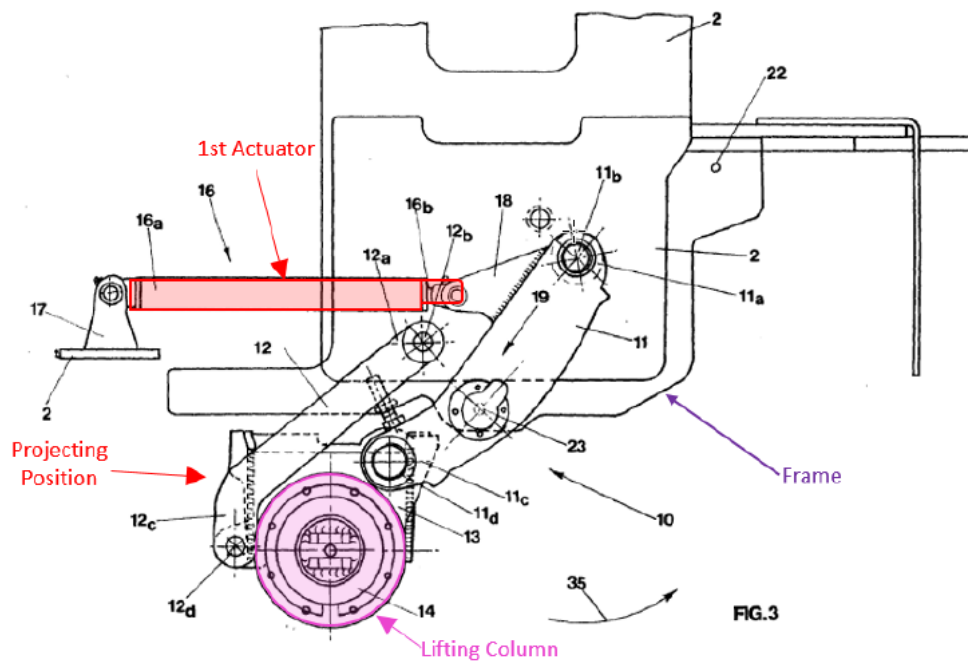
Upon review of the information in the Petition and corresponding evidence, we determine Petitioner has made a sufficient showing, at this stage of the proceeding, that the combination of Bitelli and Feliz teaches or suggests the subject matter of the “support device” element of claim 18.

d) The first actuator element

Claim 18 also recites “a first actuator connected to said support device and adapted to move said at least one ground engaging unit between projecting and retracted positions relative to said machine frame.” Ex. 1001, 11:43–46 (the “first actuator” element of claim 18). Petitioner contends that Bitelli’s hydraulic cylinder 16 corresponds to the recited first actuator. Pet. 26 (referencing Ex. 1011 ¶¶ 24–25; Ex. 1003 ¶¶ 132–135). Petitioner explains that hydraulic cylinder 16 moves a ground engaging unit between protected and retracted positions. *Id.*; *see id.* at 27 (providing annotated versions of Bitelli’s Figures 3 and 5, illustrating hydraulic cylinder 16 (identified as the first actuator) connected to the support device at bracket 18 and moving the lifting column (which is connected to a ground engaging unit) between a retracted and projected position).

Patent Owner argues that Petitioner did not identify bracket 18 as part of the support device, and cylinder 16 is connected to bracket 18, not arm 11 or arm 12.

We have considered Patent Owner’s arguments and determine that Petitioner has made a sufficient showing, at this stage of the proceeding, that Bitelli discloses the recited first actuator. We reproduce Petitioner’s annotated version of Bitelli’s Figure 3, below.



Pet. 27. Bitelli’s Figure 3 depicts a top view of the articulation unit 10, “[w]hen the articulation unit 10 and the wheel 5 integral with it are placed . . . in the projecting position.” Ex. 1011 ¶¶ 17, 42. As is seen from the figure above, bracket 18 is connected to arm 11 in such a way as to be integral with it. *See also id.* ¶ 25 (disclosing that bracket 18 “belong[s] to a first arm 11”). As such, cylinder 16 is connected to arm 11.

Upon review of the information in the Petition and corresponding evidence, we determine Petitioner has made a sufficient showing, at this stage of the proceeding, that the combination of Bitelli and Feliz teaches or suggests the subject matter of the “first actuator” element of claim 18.

e) The second actuator element

Claim 18 further recites “a second actuator connected to said lifting column and adapted to cause at least a portion of said lifting column to rotate about said lifting column axis relative to said machine frame.”

Ex. 1001, 11:47–50 (the “second actuator” element of claim 18). Petitioner

contends that Feliz’s rotary actuator corresponds to the recited second actuator. Pet. 28 (referencing Ex. 1012, 9:1–46; Ex. 1003 ¶¶ 136–144). Petitioner explains how Feliz’s actuator is located at the upper portion of its lifting column and connected to the inner tube of the lifting column to steer drive wheels 4. *Id.* at 29–35; *see also id.* at 29–33 (providing annotated versions of Feliz’s Figures 3 and 4 and identifying certain components in support of Petitioner’s contentions).

Upon review of the information in the Petition and corresponding evidence, we determine Petitioner has made a sufficient showing, at this stage of the proceeding, that the combination of Bitelli and Feliz teaches or suggests the subject matter of the “second actuator” element of claim 18.

Patent Owner does not dispute Petitioner’s contentions with respect to this claim limitation at this stage of the proceeding.

f) The spaced apart element

Finally, claim 18 recites “said second actuator being positioned at a location linearly spaced apart from said first actuator along said lifting column axis.” Ex. 1001, 11:50–52 (the “spaced apart” element of claim 18). Petitioner contends that, based on its proposed modification, the first actuator would be located near the lower portion of the lifting column and the second actuator would be located at the upper portion of the lifting column, spaced apart vertically from the first actuator. Pet. 34–36 (referencing Ex. 1011 ¶ 25; Ex. 1003 ¶¶ 145–149); *see, e.g., id.* at 36 (providing an annotated version of Bitelli’s Figure 2, showing the proposed location of the two actuators).

Upon review of the information in the Petition and corresponding evidence, we determine Petitioner has made a sufficient showing, at this

stage of the proceeding, that the combination of Bitelli and Feliz teaches or suggests the subject matter of the “linearly spaced apart actuators” element of claim 18.

Patent Owner does not dispute Petitioner’s contentions with respect to this claim limitation at this stage of the proceeding.

g) Conclusion

For the reasons discussed above, we determine, on the current record, that the information presented in the Petition shows a reasonable likelihood that claim 18 is unpatentable under 35 U.S.C. § 103 over the combination of Bitelli and Feliz.

3. Dependent claims 19, 20, 29–31, and 33

Petitioner also contends that dependent claims 19, 20, 29–31, and 33 are unpatentable as obvious over the combination of Bitelli and Feliz. Pet. 17, 40–47. As we discuss above, Petitioner has demonstrated a reasonable likelihood of success in proving that at least one claim of the ’995 patent is unpatentable, and we institute on all challenges raised in the Petition. *See SAS Inst., Inc. v. Iancu*, 138 S. Ct. 1348, 1354, 1359–60 (2018); *see also PGS Geophysical AS v. Iancu*, 891 F.3d 1354, 1360 (Fed. Cir. 2018) (interpreting the statute to require “a simple yes-or-no institution choice respecting a petition, embracing all challenges included in the petition”); Patent Trial and Appeal Board Consolidated Trial Practice Guide 64 (Nov. 2019) (“The Board will not institute on fewer than all claims or all challenges in a petition.”), *available at* <https://www.uspto.gov/TrialPracticeGuideConsolidated> (“CTPG”).

Still, we have reviewed Petitioner’s contentions and citations to the evidence and determine that Petitioner has made a sufficient showing, on the

current record, that dependent claims 19, 20, 29–31, and 33 are unpatentable under 35 U.S.C. § 103 over the combination of Bitelli and Feliz.

E. Ground 2: Claims 1–9, 11–15, 17, 21–27, 32, 35–40, 42, 44–55, 57–61, and 63 as unpatentable over Bitelli, Feliz, and Skotnikov

Petitioner contends that the combined teachings of Bitelli, Feliz, and Skotnikov render obvious the subject matter of claims 1–9, 11–15, 17, 21–27, 32, 35–40, 42, 44–55, 57–61, and 63. Pet. 17, 48–91. As we indicate above, Petitioner has demonstrated a reasonable likelihood of success in proving that at least one claim of the '995 patent is unpatentable, and we institute on all challenges raised in the Petition. *See SAS Inst.*, 138 S. Ct. at 1354, 1359–60; *see also PGS*, 891 F.3d at 1360; Patent Trial and Appeal Board Consolidated Trial Practice Guide 64 (Nov. 2019). We do address Patent Owner's specific arguments directed to this ground, below.

1. Independent claim 1 - "Support Device" and the "First Actuator"

Claim 1 recites

a support device connected between said machine frame and at least one of said ground engaging units, the support device including a lifting column having a lifting column axis oriented generally vertically relative to the machine frame, the lifting column being configured to controllably raise and lower said at least one ground engaging unit relative to the machine frame.

Ex. 1001, 9:66–10:5 (the "support device" element of claim 1). Claim 1 also recites "a first actuator connected to said support device and located at a lower portion of the lifting column, and adapted to move said at least one ground engaging unit between projecting and retracted positions relative to said machine frame." *Id.* at 10:6–10 (the "first actuator" element of claim 1). Patent Owner makes the same arguments for these limitations of claim 1 as Patent Owner made for similar limitations of claim 18, which we

address above in connection with our analysis of claim 18. So, for the reasons discussed above in connection with our analysis of claim 18, we determine that Patent Owner’s arguments do not demonstrate a deficiency in Petitioner’s positions with respect to these limitations.

2. *Independent claim 36 - Preamble*

The preamble of claim 36 recites “[a] method of controlling a pair of actuators connected to a controller,” and further requires “at least one of said actuators being a rotary actuator, to selectively position one of a plurality of ground engaging units connected to a respective lifting column having a lifting column axis and supporting a frame of a self-propelled machine.” Ex. 1001, 13:7–12. Petitioner contends that the preamble recites structures similar to the structures recited in claim 1 and directs us to the analysis in the Petition for claim 1. Pet. 58–59.

Patent Owner argues that “[t]he [P]etition offers virtually no analysis of this multifaceted limitation.” Prelim. Resp. 42. Patent Owner adds that

[t]he [P]etition . . . relies entirely on unexplained citations to six sections of the petition spanning eight pages and twelve paragraphs of [M]r. Orr’s declaration spanning 17 pages. This vague reference to large swaths of the petition and [M]r. Orr’s declaration does not even come close to providing the specificity required by Rule 104.

Id.

We have reviewed Patent Owner’s argument and determine, on the current record, that Patent Owner does not demonstrate a deficiency in Petitioner’s contentions. First, we note that Patent Owner does not provide any analysis of which, if any, aspects of the preamble we should consider limiting. *Cf. Am. Med. Sys., Inc. v. Biolitec, Inc.*, 618 F.3d 1354, 1358–59 (Fed. Cir. 2010) (“‘Generally,’ we have said, ‘the preamble does not limit

the claims.’ . . . A preamble is not regarded as limiting, however, ‘when the claim body describes a structurally complete invention such that deletion of the preamble phrase does not affect the structure or steps of the claimed invention.’ If the preamble ‘is reasonably susceptible to being construed to be merely duplicative of the limitations in the body of the claim (and was not clearly added to overcome a [prior art] rejection), we do not construe it to be a separate limitation.’”); *Vaupel Textilmaschinen KG v. Meccanica Euro Italia SPA*, 944 F.2d 870, 880 (Fed. Cir. 1991) (concluding that certain structural components recited in the preamble and body of a method claim were not structural limitations).

Second, even if limiting, Petitioner sufficiently demonstrates, at this stage of the proceeding, that the Bitelli-Feliz-Skotnikov combination teaches or suggests the structural aspects of the method of claim 36 recited in the preamble by referencing the Petition’s analysis of the apparatus of claim 1. *See* Pet. 48–55.

3. *Independent Claim 45 – Means-Plus-Function limitations*

As we discuss above in connection with our claim construction analysis, we agree with Patent Owner’s argument that Petitioner’s treatment of the means-plus-function claim limitations of independent claim 45 is deficient. Petitioner fails to identify the specific structures associated with

each means-plus-function term⁸. Accordingly, Petitioner cannot demonstrate that the prior art discloses the structure corresponding to each means-plus-function limitation, and, consequently, cannot demonstrate that independent claim 45 is unpatentable over the prior art.

4. *Dependent Claims 2–9, 11–15, 17, 21–27, 32, 35, 37–40, 42, 44, 46–55, 57–61, and 63*

Petitioner also contends that dependent claims 2–9, 11–15, 17, 21–27, 32, 35, 37–40, 42, 44, 46–55, 57–61, and 63 are unpatentable as obvious over the combination of Bitelli, Feliz, and Skotnikov. Pet. 17, 68–92. As we discuss above, Petitioner has demonstrated a reasonable likelihood of success in proving that at least one claim of the '995 patent is unpatentable, so we institute on all challenges raised in the Petition. *See SAS Inst.*, 138 S. Ct. at 1354, 1359–60; *see also PGS*, 891 F.3d at 1360; Patent Trial and Appeal Board Consolidated Trial Practice Guide 64 (Nov. 2019).

Still, we have also reviewed Petitioner's contentions and citations to the evidence for dependent claims 2–9, 11–15, 17, 21–27, 32, 35, 37–40, 42, 44, 46–55, 57–61, and 63, and determine that Petitioner has made a sufficient showing, on the current record, that claims 2–9, 11–15, 17, 21–27, 32, 35, 37–40, 42, and 44, are unpatentable under 35 U.S.C. § 103 over the combination of Bitelli, Feliz, and Skotnikov. Petitioner has not made a sufficient showing that claims 46–55, 57–61, and 63, which depend

⁸ To the extent that Petitioner's reference to "co-pending Petition IPR2022-01394" is an attempt to incorporate the claim construction analysis in that petition into the present Petition, such an effort is improper. *See* 37 C.F.R. § 42.6(a)(3) ("Arguments must not be incorporated by reference from one document into another document"), Pet. 17 ("As discussed in co-pending Petition IPR2022-01394, claim 45 should be interpreted under 35 U.S.C. § 112, ¶6." (citing IPR2022-01394, Petition, 16)).

ultimately from claim 45, are unpatentable for the reasons discussed above in connection with our analysis of claim 45.

F. Ground 3: Claims 10, 28, 41, and 56 as unpatentable over Bitelli, Feliz, Skotnikov, and McColl

Petitioner further contends that the combined teachings of Bitelli, Feliz, Skotnikov, and McColl render obvious the subject matter of claims 10, 28, 41, and 56 (Ground 3). Pet. 18, 92–95. As we discuss above, Petitioner has demonstrated a reasonable likelihood of success in proving that at least one claim of the '995 patent is unpatentable. Accordingly, we institute on all challenges raised in the Petition, including those challenged under Ground 3. *See SAS Inst.*, 138 S. Ct. at 1354, 1359–60; *see also PGS*, 891 F.3d at 1360; Patent Trial and Appeal Board Consolidated Trial Practice Guide 64 (Nov. 2019).

Still, we have also reviewed Petitioner's contentions and citations to the evidence for dependent claims 10, 28, and 41, and determine that Petitioner has made a sufficient showing, on the current record, that claims that these claims are unpatentable under 35 U.S.C. § 103 over the combination of Bitelli, Feliz, Skotnikov, and McColl. Petitioner has not made a sufficient showing that claim 56, which depends ultimately from claim 45, is unpatentable for the reasons discussed above in connection with our analysis of claim 45.

III. DISCRETIONARY DENIAL

A. Discretion under 35 U.S.C. § 314(a)

The Board has discretion not to institute an *inter partes* review. *See* 35 U.S.C. § 314(a) (authorizing institution of an *inter partes* review under

particular circumstances, but not requiring institution under any circumstances); *Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2140 (2016) (“[T]he agency’s decision to deny a petition is a matter committed to the Patent Office’s discretion.”); *Harmonic Inc. v. Avid Tech, Inc.*, 815 F.3d 1356, 1367 (Fed. Cir. 2016) (explaining that under § 314(a), “the PTO is permitted, but never compelled, to institute an IPR proceeding”).

Petitioner filed two parallel petitions challenging the ’995 patent—this Petition and a petition in IPR2022-01394 (the “’1394 Petition”). Petitioner argues that both petitions are justified, but ranks this Petition second should the Board elect to consider only one petition.⁹ Paper 1, 1; *see, e.g.*, CTPG 59 (“Based on the Board’s experience, one petition should be sufficient to challenge the claims of a patent in most situations. . . . Nonetheless, the Board recognizes that there may be circumstances in which more than one petition may be necessary . . .”). Patent Owner argues that multiple petitions are not warranted.

Petitioner contends that “[t]here is a disconnect between what the Patentee argued during prosecution and the allowed claims of the ’995 patent.” Paper 1, 1. Petitioner explains that “[d]uring prosecution, the arguments focused on the alleged non-obviousness of a rotary actuator used with a lifting column” but that “claims 18, 21–35, 45, [and] 49–63 do not even recite a rotary actuator.” *Id.* As such, in the ’1394 Petition, Petitioner relies on prior art disclosing a linear actuator for these claims, and, in the present Petition, relies on prior art that discloses a rotary actuator for all claims. *See id.* at 1–2.

⁹ In a decision filed concurrently with this decision, we institute trial in IPR2022-01394.

Patent Owner notes that for some claims in the '1394 Petition, Petitioner construes the claims as requiring a rotary actuator. Paper 8, 2. Patent Owner adds that the number of claims does not warrant two petitions, as only 21 of the claims were challenged in the parallel litigation. *Id.*; *see also id.* at 3–5 (addressing additional arguments from Petitioner).

We determine that two petitions are appropriate in this case. We base our determination on the ambiguity in the prosecution history, where the Examiner seems to suggest that the second actuator must be a rotary actuator. *See* Ex. 1002, 280 (rejecting *all* of the pending independent claims and stating that Dubay¹⁰ (Ex. 1007, which the Examiner refers to as “Wo document '117” or just “Wo document”) “discloses the invention substantially as claimed. However, Wo document *lacks the second actuator being a rotary actuator*” (emphasis added)). We also determine that instituting both petitions does not “place a substantial and unnecessary burden on the Board,” and Patent Owner does not argue that two petitions would place such a burden on Patent Owner. *See* CTPG 59.

B. Discretion under 35 U.S.C. § 325(d)

Patent Owner contends that we should exercise our discretion under 35 U.S.C. § 325(d) to deny the Petition, applying our precedential decisions in *Advanced Bionics, LLC v. MED-EL Elektromedizinische Geräte GmbH*, IPR2019-01469, Paper 6 (PTAB Feb. 13, 2020) (precedential) (“*Advanced Bionics*”) and *Becton, Dickinson & Co. v. B. Braun Melsungen AG*, IPR2017-01586, Paper 8 (PTAB Dec. 15, 2017) (precedential as to § III.C.5, first paragraph) (“*Becton, Dickinson*”). Prelim. Resp. 13–26.

¹⁰ WO 02/103117 A1; published Dec. 27, 2002 (Ex. 1007, “Dubay”)

Patent Owner argues that the “Bitelli-Feliz combination mirrors the Dubay-Littman combination that Caterpillar overcome during examination.” Prelim. Resp. 15. As we explain below, we disagree, and we do not exercise our discretion to deny institution under § 325(d).

1. Applicable Framework

Section 325(d) provides that, in determining whether to institute an *inter partes* review, “the Director 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) (2018). The Board uses a two-part framework in determining whether to exercise its discretion under § 325(d), specifically:

- (1) whether the same or substantially the same 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 [the] first part of the framework is satisfied, whether the petitioner has demonstrated that the Office erred in a manner material to the patentability of challenged claims.

Advanced Bionics at 8.

In applying the two-part framework, we consider several non-exclusive factors from *Becton, Dickinson*, which provide “useful insight into how to apply the framework” (*Advanced Bionics* at 9): (a) the similarities and material differences between the asserted art and the prior art involved during examination; (b) the cumulative nature of the asserted art and the prior art evaluated during examination; (c) the extent to which the asserted art was evaluated during examination, including whether the prior art was the basis for rejection; (d) the extent of the overlap between the arguments made during examination and the manner in which Petitioner relies on the

prior art or Patent Owner distinguishes the prior art; (e) whether Petitioner has pointed out sufficiently how the examiner erred in its evaluation of the asserted prior art; and (f) the extent to which additional evidence and facts presented in the Petition warrant reconsideration of the prior art or arguments. *Becton, Dickinson* at 17–18. If, after review of factors (a), (b), and (d), we determine that the same or substantially the same art or arguments previously were presented to the Office, we then review factors (c), (e), and (f), which relate to whether the petitioner demonstrates that the Office erred in a manner material to the patentability of the challenged claims. *Advanced Bionics* at 10.

2. *Analysis*

We start our analysis with a review of the relevant history of the '995 patent before the Office. We then apply the *Advanced Bionics* two-part framework to the facts.

a) History of the '995 patent before the Office

In this proceeding, as discussed above, Wirtgen America, Inc. challenged claims 1–15, 17–33, 35–42, 44–61, and 63 of the '995 patent with three grounds, which relied on combinations of Bitelli, Feliz, Skotnikov, and McColl. A discussion about what these prior art references describe can be found above. *See discussion supra*, § I.F.

Relevant to our analysis here, the Office rejected pending claims 1, 21, 38, and 47 (which issued as independent claims 1, 18, 36, and 45, respectively) over Dubay and Littman¹¹. Ex. 1002, 280, 318. The Examiner reasoned that

¹¹ U.S. 4,558,758, issued December 17, 1985 (Ex. 2001, “Littman”).

[i]t would have been considered obvious to one of ordinary skill in the art to modify Wo document by substituting the rotary actuator as taught by Littman . . . for the rotary means (actuator (21) and linkage 14, 16) as disclosed by Wo document since the substitution of one known element for another would have yielded predictable results. Such a substitution would reduce the cumbersomeness of having several linkage mechanisms.

Id. at 280–281.

In arguing that pending claims 1, 21, and 38 were patentable over the Examiner’s proposed combination, the Applicant stated that Littman did not disclose the second actuator connected to a lifting column, as Littman did not disclose a lifting column, and Littman provides no suggestion to linearly space apart its actuator from the first actuator (for claims 21 and 38).

Ex. 1002, 305, 307, 308. The Applicant made similar arguments with respect to claim 47 and the “second actuatable means.” *Id.* at 309–310.

The claims were then allowed. *See* Ex. 1002, 314.

b) Part One of the Advanced Bionics framework

Under the first part of the *Advanced Bionics* two-part framework, we determine “whether the same or substantially the same art previously was presented to the Office or whether the same or substantially the same arguments previously were presented to the Office.” *Advanced Bionics* at 8. We look to *Becton, Dickinson* factors (a), (b), and (d) to inform our analysis. *Advanced Bionics* at 9–10.

(1) Becton, Dickinson Factors (a), (b), and (d)

Factor (a) under the *Becton, Dickinson* construct looks at “the similarities and material differences between the asserted art and the prior art involved during examination.” *Advanced Bionics* at 9 n.10. Factor (b) under the *Becton, Dickinson* construct looks at “the cumulative nature of the

asserted art and the prior art evaluated during examination.” *Advanced Bionics* at 9 n.10. Factor (d) under the *Becton, Dickinson* construct looks at “the extent of the overlap between the arguments made during examination and the manner in which petitioner relies on the prior art” or Patent Owner distinguishes the prior art. *Advanced Bionics* at 9 n.10.

We find that neither the same or substantially the same art previously was presented to the Office nor the same or substantially the same arguments previously were presented to the Office. As an initial point, there is no dispute that Feliz was not before the Office. *See* Pet. 18 (“All the grounds rely on references never presented to the Office during prosecution and raise arguments never considered by the Office.”).

The Examiner’s rejections during prosecution of the application that matured into the ’995 patent relied on Littman, which features a rotary actuator located just above the wheel at the lower part of its leg, to teach the second actuator. *See* Ex. 1002, 280–281; Ex. 2001, 4:13–32 (describing drive means 88), Figs. 1–5 (depicting drive means 88). The Petition relies on Feliz’s rotary actuator for the second actuator. Pet. 33–34. However, this is where the similarities between Feliz and Littman end. Feliz discloses an earth excavator with lifting columns. *See* Ex. 1012, 8:45–9:12; *see also* Pet. 26 (providing an annotated version of Feliz’s Figure 4, identifying a rotary actuator at the upper portion of a lifting column, over a ground engaging unit). In this way, Feliz is not cumulative of Littman. *See* Ex. 2001, 1:5–10 (describing Littman’s “prime mover,” which has “a plurality of elongated, segmented legs with individual steerable drive means on each so as to enable the prime mover to be easily moved to and

positioned properly in a wide variety of environments and terrains”), Fig. 1 (showing the prime mover).

The Examiner reasoned that a person having ordinary skill in the art would have looked to Littman’s rotary actuator as the second actuator. Ex. 1002, 280–281. The Applicant argued that Littman does not suggest spacing its rotary actuator apart from a first actuator or have a lifting column. In contrast, Petitioner directs us to express disclosures in Feliz of a lifting column and the second actuator positioned near the top of a lifting column, such that it is spaced apart in the vertical direction from Bitelli’s first actuator. *See* Pet. 29, 35. As such, little overlap exists between the arguments made during prosecution and the arguments in the Petition.

For the reasons discussed above, we find that Part One of the *Advanced Bionics* framework is not satisfied.

a) Part Two of the Advanced Bionics framework

Because we find that Part One of the *Advanced Bionics* framework is not satisfied, we need not move to Part Two of the framework.

b) Conclusion

Based on our analysis of the *Becton*, *Dickinson* factors within the *Advanced Bionics* framework, we determine that discretionary denial under § 325(d) is not appropriate under the facts before us.

IV. CONCLUSION

Based on the information presented, we determine Petitioner has established a reasonable likelihood that it would prevail with respect to at least one of the Challenged Claims. Accordingly, we institute an *inter partes* review on all challenges.

V. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that, pursuant to 35 U.S.C. § 314(a), an *inter partes* review is instituted as to claims 1–15, 17–33, 35–42, 44–61, and 63 of U.S. Patent No. 7,523,995 B2;

FURTHER ORDERED that pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4, notice is hereby given of the institution of a trial, which commences on the entry date of this Order.

IPR2022-01395
Patent 7,523,995 B2

For PETITIONER:

Ralph Powers
Graham Phero
John Higgins
STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.
tpowers@sternekessler.com
gphero@sternekessler.com
jhiggins@sternekessler.com

Ryan Levy
William Sekyi
Seth Ogden
PATTERSON INTELLECTUAL PROPERTY LAW, P.C.
rdl@iplawgroup.com
wes@iplawgroup.com
sro@iplawgroup.com

For PATENT OWNER:

Matthew Argenti
Michael Rosato
Wesley Derryberry
Tasha Thomas
WILSON SONSINI GOODRICH & ROSATI
margenti@wsgr.com
mrosato@wsgr.com
wderryberry@wsgr.com
tthomas@wsgr.com