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 IPR2021-00135
Patent No. 9,908,571

PETITION FOR INTER PARTES REVIEW

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Exhibit No.	Description
1001	U.S. Patent No. 9,908,571
1002	Declaration of William Singhose, Ph.D. ("Singhose")
1003	Curriculum Vitae of William Singhose, Ph.D.
1004	Prosecution History for U.S. Patent No. 9,908,571 (downloaded from PAIR)
1005	Commander III New Generation Trimmer/Paver Operator/Service Manual G21 Controls ("CIII")
1006-1009	Reserved
1010	U.S. Patent No. 6,481,924 to Smolders et al. ("Smolders")
1011	Reserved
1012	Declaration of Shari Simmons
1013	Deposition Transcript of Kenneth Bryden, Ph.D., *Guntert & Zimmerman Const. Div., Inc. v. GOMACO Corp.*, Case No. 5:20-cv-4007-CJW-KEM (N.D. Iowa) (Aug. 13, 2020)
1014	Reserved
1015	Plaintiff Guntert & Zimmerman Const. Div., Inc.'s Initial Disclosure of Infringement Contentions, *Guntert & Zimmerman Const. Div., Inc. v. GOMACO Corp.*, Case No. 5:20-cv-4007-CJW-KEM (N.D. Iowa) (June 19, 2020)
1016	U.S. Patent No. 9,908,571: GOMACO Commander III (Three Track) Infringement Contentions, *Guntert & Zimmerman Const. Div., Inc. v. GOMACO Corp.*, Case No. 5:20-cv-4007-CJW-KEM (N.D. Iowa) (June 19, 2020)
1017	U.S. Patent No. 9,908,571: GOMACO Commander III (Four Track) Infringement Contentions, *Guntert & Zimmerman Const. Div., Inc. v. GOMACO Corp.*, Case No. 5:20-cv-4007-CJW-KEM (N.D. Iowa) (June 19, 2020)
1018	Docket Sheet for *Guntert & Zimmerman Const. Div., Inc. v. GOMACO Corp.*, Case No. 5:20-cv-4007-CJW-KEM (N.D. Iowa) (downloaded Sept. 24, 2020)
1019	Trial Management Order, *Guntert & Zimmerman Const. Div., Inc. v. GOMACO Corp.*, Case No. 5:20-cv-4007-CJW-KEM, ECF No. 35 (N.D. Iowa) (June 10, 2020)

Exhibit No.	Description
1020	GOMACO's Invalidity Contentions Cover Sheets, *Guntert & Zimmerman Const. Div., Inc. v. GOMACO Corp.*, Case No. 5:20-cv-4007-CJW-KEM (N.D. Iowa) (Aug. 3, 2020)
1021	Joint Claim Construction Statement, *Guntert & Zimmerman Const. Div., Inc. v. GOMACO Corp.*, Case No. 5:20-cv-4007-CJW-KEM (N.D. Iowa) (Oct. 2, 2020)
1022-1025	Reserved
1026	U.S. Patent No. 6,890,123 to Piccoli ("Piccoli")
1027	Reserved
1028	U.S. Patent Application Publication No. 2011/0236129 to Guntert et al. ("Guntert")
1029	U.S. Patent No. 9,708,020
1030	U.S. Patent Application Publication No. 2015/0354149 to Dahm et al. ("Dahm")
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1035	Excerpts of Hearing Transcript from Motion for Preliminary Injunction, *Guntert & Zimmerman Const. Div., Inc. v. GOMACO Corp.*, Case No. 5:20-cv-4007-CJW-KEM (N.D. Iowa) (Sept. 11, 2020)
1036	GOMACO Press Release, GOMACO Introduces the Three-Track Commander IIIx for Extreme Radii (March 2017), available at http://www.gomaco.com/Resources/pressreleases/pressreleases_conexpo2017_1.html and http://www.gomaco.com/Resources/pressreleases.html (last accessed November 4, 2020)
1037-1099	Reserved
1100	Public dissemination evidence for the New Generation Commander III Operator's Manual related to machine 900100-702

Exhibit No.	Description
1101	Public dissemination evidence for the New Generation Commander III Operator's Manual related to machine 900100-703
1102	Public dissemination evidence for the New Generation Commander III Operator's Manual related to machine 900100-704
1103	Public dissemination evidence for the New Generation Commander III Operator's Manual related to machine 900100-705
1104	Public dissemination evidence for the New Generation Commander III Operator's Manual related to machine 900100-706
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1111	Public dissemination evidence for the New Generation Commander III Operator's Manual related to machine 900100-716
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1113	Public dissemination evidence for the New Generation Commander III Operator's Manual related to machine 900100-718
1114	Public dissemination evidence for the New Generation Commander III Operator's Manual related to machine 900100-720
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1117	Public dissemination evidence for the New Generation Commander III Operator's Manual related to machine 900100-728
1118	Public dissemination evidence for the New Generation Commander III Operator's Manual related to machine 900100-729
1119	Public dissemination evidence for the New Generation Commander III Operator's Manual related to machine 900100-730
1120	Public dissemination evidence for the New Generation Commander III Operator's Manual related to machine 900100-731
1121	Public dissemination evidence for the New Generation Commander III Operator's Manual related to machine 900100-732
1122	Public dissemination evidence for the New Generation Commander III Operator's Manual related to machine 900100-733
1123	Public dissemination evidence for the New Generation Commander III Operator's Manual related to machine 900100-737
1124	Public dissemination evidence for the New Generation Commander III Operator's Manual related to machine 900100-739

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Exhibit No.	Description
1125	Public dissemination evidence for the New Generation Commander III Operator's Manual related to machine 900100-741
1126	Public dissemination evidence for the New Generation Commander III Operator's Manual related to machine 900100-742
1127	Public dissemination evidence for the New Generation Commander III Operator's Manual related to machine 900100-743
1128	Public dissemination evidence for the New Generation Commander III Operator's Manual related to machine 900100-745
1129	Public dissemination evidence for the New Generation Commander III Operator's Manual related to machine 900100-746
1130	Public dissemination evidence for the New Generation Commander III Operator's Manual related to machine 900100-747
1131	Public dissemination evidence for the New Generation Commander III Operator's Manual related to machine 900100-748
1132	Public dissemination evidence for the New Generation Commander III Operator's Manual related to machine 900100-749
1133	Public dissemination evidence for the New Generation Commander III Operator's Manual related to machine 900100-750
1134	Public dissemination evidence for the New Generation Commander III Operator's Manual related to machine 900100-754
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1139	Public dissemination evidence for the New Generation Commander III Operator's Manual related to machine 900100-761
1140	Public dissemination evidence for the New Generation Commander III Operator's Manual related to machine 900100-766
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1146	Public dissemination evidence for the New Generation Commander III Operator's Manual related to machine 900100-772
1147	Public dissemination evidence for the New Generation Commander III Operator's Manual related to machine 900100-773
1148	Public dissemination evidence for the New Generation Commander III Operator's Manual related to machine 900100-774

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Exhibit No.	Description
1149	Public dissemination evidence for the New Generation Commander III Operator's Manual related to machine 900100-780
1150	Public dissemination evidence for the New Generation Commander III Operator's Manual related to machine 900100-661
1151	Public dissemination evidence for the New Generation Commander III Operator's Manual related to machine 900100-675
1152	Public dissemination evidence for the New Generation Commander III Operator's Manual related to machine 900100-713
1153	Public dissemination evidence for the New Generation Commander III Operator's Manual related to machine 900100-762
1154	Public dissemination evidence for the New Generation Commander III Operator's Manual related to machine 900100-764

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I. PRELIMINARY STATEMENT

Godbersen-Smith Construction Company d/b/a GOMACO Corporation ("GOMACO") requests *inter partes* review and cancellation of claims 1-15 of U.S. Patent 9,908,571 (Ex. 1001), assigned to Guntert & Zimmerman Const. Div., Inc. ("G&Z"). The '571 patent describes slipform pavers that lay concrete.

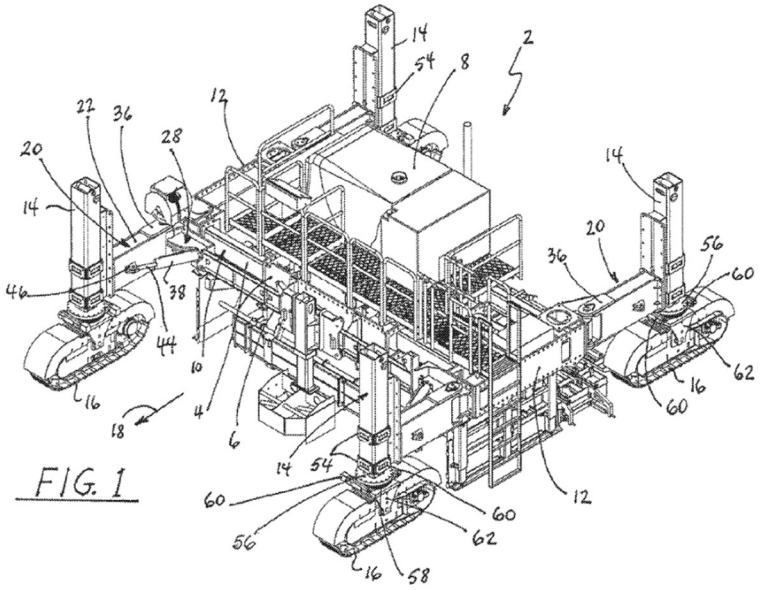


FIG. 1

Ex. 1001, Fig. 1. These pavers have pivotable swing-legs (four are shown above) that allow the crawler tracks rolling along the ground to be positioned at various widths.

The '571 patent describes designs where its swing legs attach *indirectly* to a machine frame's center module through a "bolster." Every application to which the '571 patent claims priority only disclosed bolster designs where the bolster and swing-leg combination attached to *sides* of the center module. Over *six years* after

G&Z filed the 2011 grandparent application that was the first non-provisional application in the chain of priority, and mere months after GOMACO announced new designs for its front and rear bolster machines (Ex. 1036), G&Z filed its application for the '571 patent—a *continuation-in-part* application with newly disclosed slipform-paver designs where the bolster and swing-leg combination attached to the *forward* and *aft* ends of the center module.

The '571 patent claims only cover designs where the bolster and swing-leg combination attaches to the forward and aft ends of the center module. Because G&Z did not disclose this design until filing its application for the '571 patent (on June 14, 2017), G&Z cannot claim priority back to the 2011 grandparent application (or any other preceding application), which means U.S. Patent Application Publication No. 2011/0236129 to Guntert et al. ("Guntert"; Ex. 1028)—the publication of the 2011 grandparent application—is prior art to the '571 patent. Guntert in combination with "Commander III New Generation Trimmer/Paver Operator/Service Manual G21 Controls" ("CIII"; Ex. 1005), which discloses bolsters connected to the forward and aft ends of the center module (and a swing leg attached to the forward bolster), renders the '571 patent claims obvious.

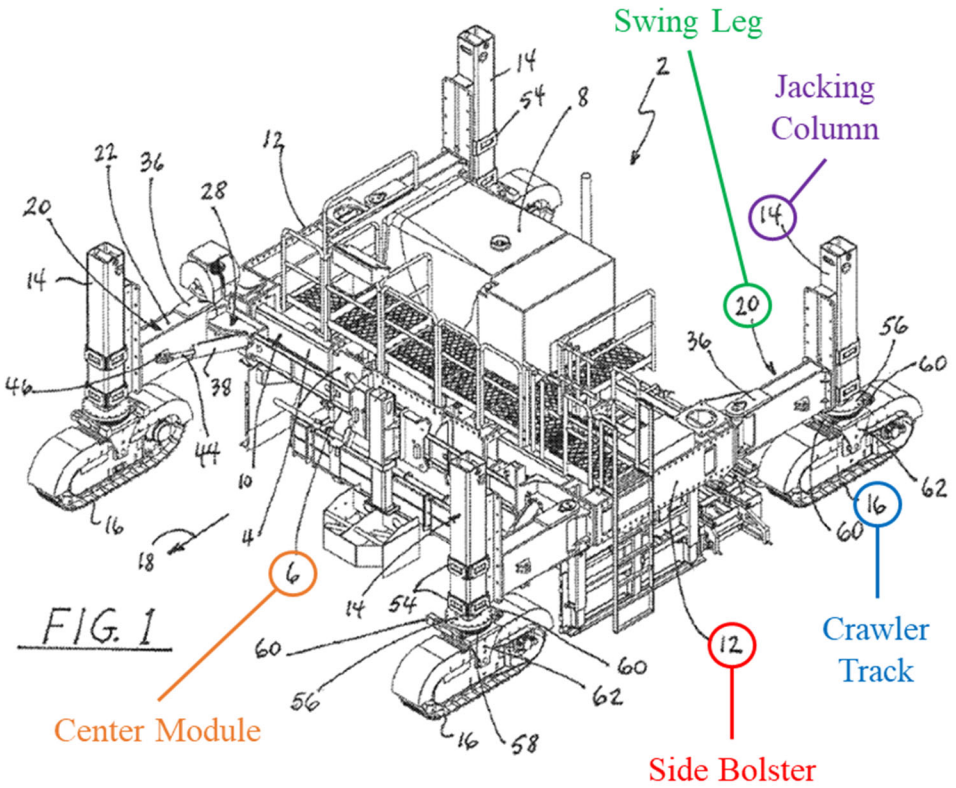
Next, the '571 patent's specification and claims focus extensively on a sensor-driven, coordinated control system where a crawler track rotates as the

swing leg pivots. Guntert discloses this design. It would have been obvious to combine Guntert and CIII such that CIII's frame and bolster design is used on a three-track paver with Guntert's swing legs and control system. For these reasons, claims 1-15 of the '571 patent should be canceled.

II. THE '571 PATENT

A. The Specification

The '571 patent discloses a slipform paving machine having a center module, bolsters, swing legs, jacking columns, and crawler tracks. Ex. 1001, 8:45-10:45. These features are depicted below.



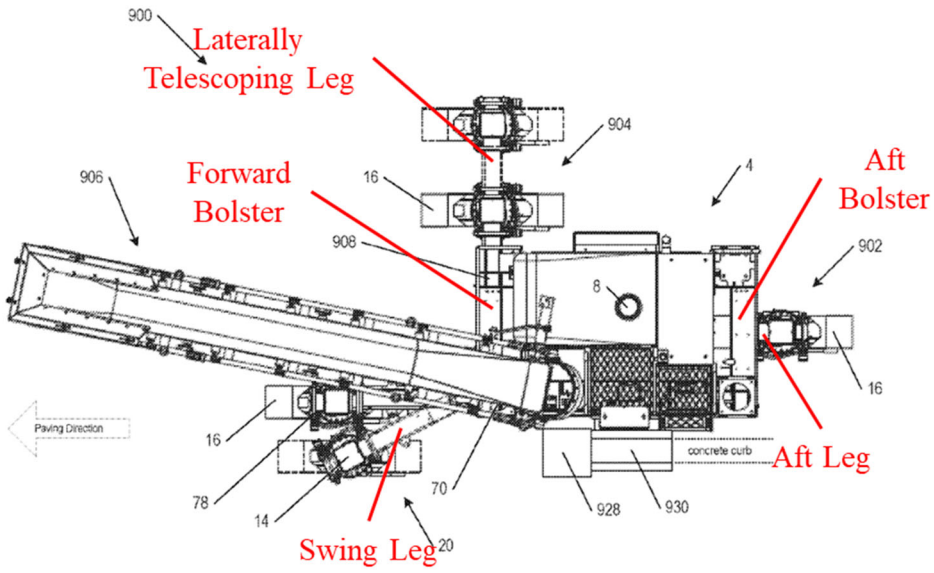
Id., Fig. 1 (annotated). The crawler tracks "are mounted to" and rotate relative to the jacking columns. *Id.*, 8:57-60. Each jacking column includes two hollow tubes (outer 48 and inner 50) that telescope relative to each other in response to an internal hydraulic actuator that extends/retracts, which raises/lowers the machine. *Id.*, 8:55-57, 11:14-34.

Each swing leg is fixed to the jacking column on one end and is pivotally connected to the machine on the other, allowing the swing leg to pivot horizontally. *Id.*, 9:23-30. When the leg pivots, it swings the jacking column and crawler track to various positions. *Id.*, 10:46-63. Every feature described above predates the '571 patent, as the specification admits. *Id.*, 1:20-5:53, 8:51-60, 11:32-34 (describing features as "conventional" and "well known").

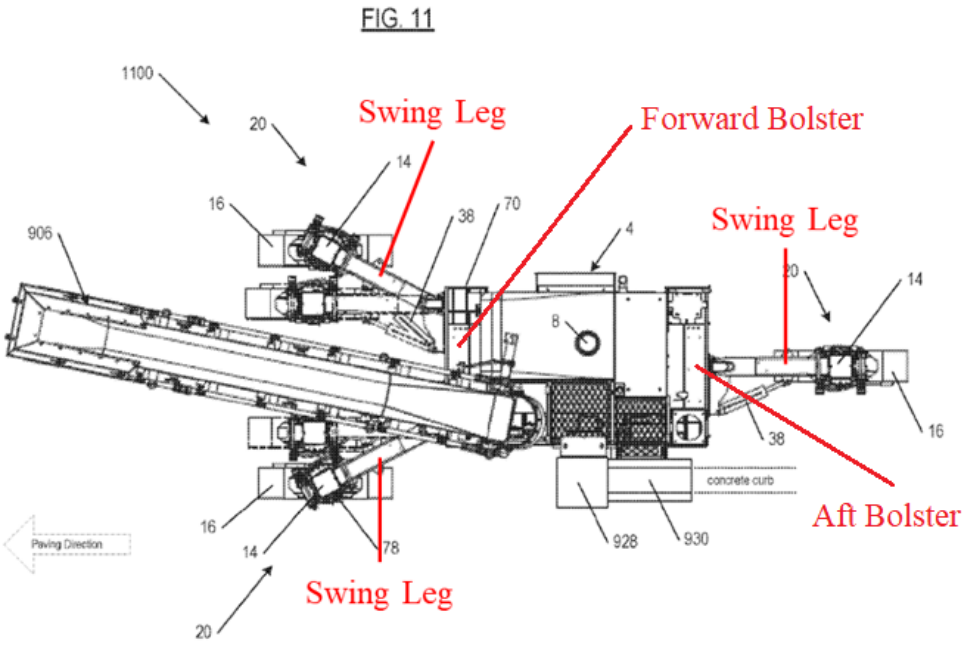
Figures 1-8E of the '571 patent were disclosed in the applications to which the '571 patent claims priority and describe pavers with *four* legs, where the legs attach to bolsters, and the bolsters attach to *sides* of the center module. *E.g.*, Guntert, ¶¶[0015], [0020], Figs. 1-2. The '571 patent application added Figures 9-13E, which describe pavers with *three* legs, where, for the first time, bolsters attach to the *forward* and *aft* ends of the center module, as opposed to the sides. *E.g.*, Ex. 1001, 17:33-21:58, Figs. 9-13E. This new matter disclosed "several configurations" of three-leg designs. *Id.*, 15:53-56. For example, the specification

discloses a three-leg paving machine having two forward legs—a swing leg and a laterally telescoping leg—and one aft leg, as shown below. *Id.*, 17:33-37.

FIG. 9

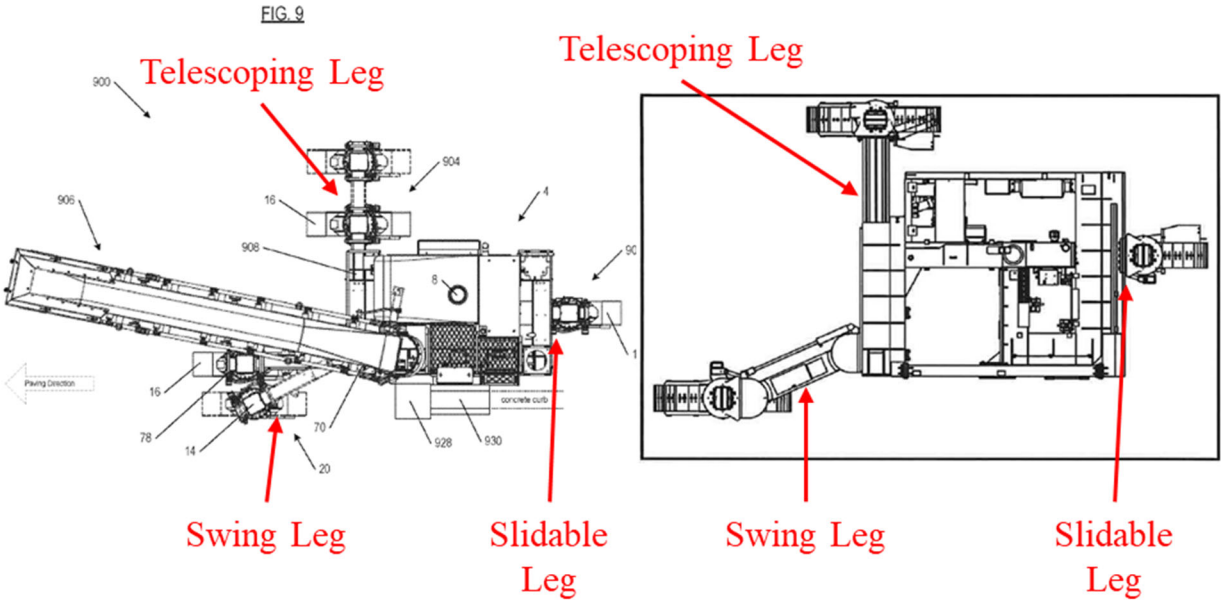


Id., Fig. 9 (annotated top-down view). The patent also discloses an embodiment where all three legs are swing legs. *Id.*, 19:20-27.



Id., Fig. 11 (annotated top-down view). In both Figures 9 and 11, all bolsters attach to either the forward or aft ends of the center module, and the legs attach to those bolsters.

G&Z filed this new, continuation-in-part subject matter *over six years* after it filed the first non-provisional application in the chain of priority. Moreover, G&Z has never sold a three-track paver (Ex. 1035, 76:11-21), meaning that none of G&Z's commercially sold pavers ever practiced the design shown in Figs. 9-13E of the '571 patent (i.e., the new-matter designs). In contrast, GOMACO had been building and selling three-track pavers for years. *See, e.g.*, *infra* Section VII.A.2.b. Notably, Figure 9 of the '571 patent (shown below) resembles GOMACO pavers sold prior to the filing of the '571 patent.



Ex. 1001, Fig. 9 (left); CIII, 6-3 (right). The similarities in these pictures show that G&Z, rather than competing with GOMACO on the market, tried to patent GOMACO's design with the new matter in Figs. 9-13E.

In addition to forward and aft bolsters described above, the '571 patent discloses an actuator that pivots the swing leg and a power drive that rotates the crawler track. *Id.*, 6:9-11, 6:28-30. Angular position transducers provide outputs to a processor, which uses those signals to control crawler track rotation as the swing leg pivots. *Id.*, 6:12-20.

B. The Prosecution History

The '571 patent was filed as a continuation-in-part of U.S. Patent No. 9,708,020 ("the '020 patent"; Ex. 1029). The new matter added includes Figures 9-13E and ¶¶ [0072]-[0095]. Ex. 1004, 22-31. The initial claim in the '571

application required bolsters that were "laterally and movably ***connected to respective lateral sides*** of the center module." *Id.*, 32 (emphasis added). The Applicant canceled this claim and submitted new ones, including two independent claims requiring a "forward bolster ***connected to the forward end*** of the center module" and an "aft bolster ***connected to the aft end*** of the center module." *Id.*, 99-106 (emphases added). Then, the Applicant explained that the new claims corresponded to "the front and aft ends of the paving machines" shown in "Figs. 9-13E," (i.e., the Figures that added the new matter). *Id.*, 108.

C. Effective Filing Date

The '571 patent claims are entitled to an effective filing date of June 14, 2017—i.e., the '571 patent's filing date. Singhose,[1] ¶¶35-51. The effective filing date of a claimed invention is the patent's actual filing date unless the patentee can show entitlement to an earlier priority date under, *inter alia*, §§ 119 or 120. 35 U.S.C. § 100(i)(1); *Nat. Alts. Int'l, Inc. v. Iancu*, 904 F.3d 1375, 1380 (Fed. Cir. 2018). As stated, the '571 patent originated from a continuation-in-part application that added new matter regarding slipform paver configurations, most notably three-legged designs where the legs were coupled to bolsters that were *connected to the*

[1] Citations to "Singhose" refer to the Declaration of William Singhose, Ph.D., Ex. 1002.

forward and aft ends of the center module. *See, e.g.*, Ex. 1001, Figs. 9-13E, 15:53-22:36. "When neither the PTO nor the Board has previously considered priority, there is simply no reason to presume that claims in a CIP application are entitled to the effective filing date of an earlier filed application." *PowerOasis, Inc. v. T-Mobile USA, Inc.*, 522 F.3d 1299, 1305 (Fed. Cir. 2008). The patentee has the burden to prove entitlement to an earlier effective filing date. *Id.*

Claim 1 of the '571 patent (the only independent claim in the patent) recites "a forward bolster connected to the forward end of the center module" and "an aft bolster connected to the aft end of the center module." No application to which the '571 patent claims priority provides written-description support for these limitations. For example, Guntert, which is the publication of the first non-provisional application in the priority chain, only discloses paving machines with ***side*** bolsters "laterally movably connected to respective ***lateral sides of the center module*** for changing a spacing between the bolsters." Guntert, ¶[0020] (emphasis added).[2] Telescoping male support beams connect the side bolsters to the lateral

[2] Each subsequent application in the priority chain preceding the '571 patent was filed as a continuation application (as opposed to a continuation-in-part application like the '571 patent). For purposes of this IPR, Guntert is treated as representative of all priority applications. *Zenon Envtl., Inc. v. U.S. Filter Corp.*,

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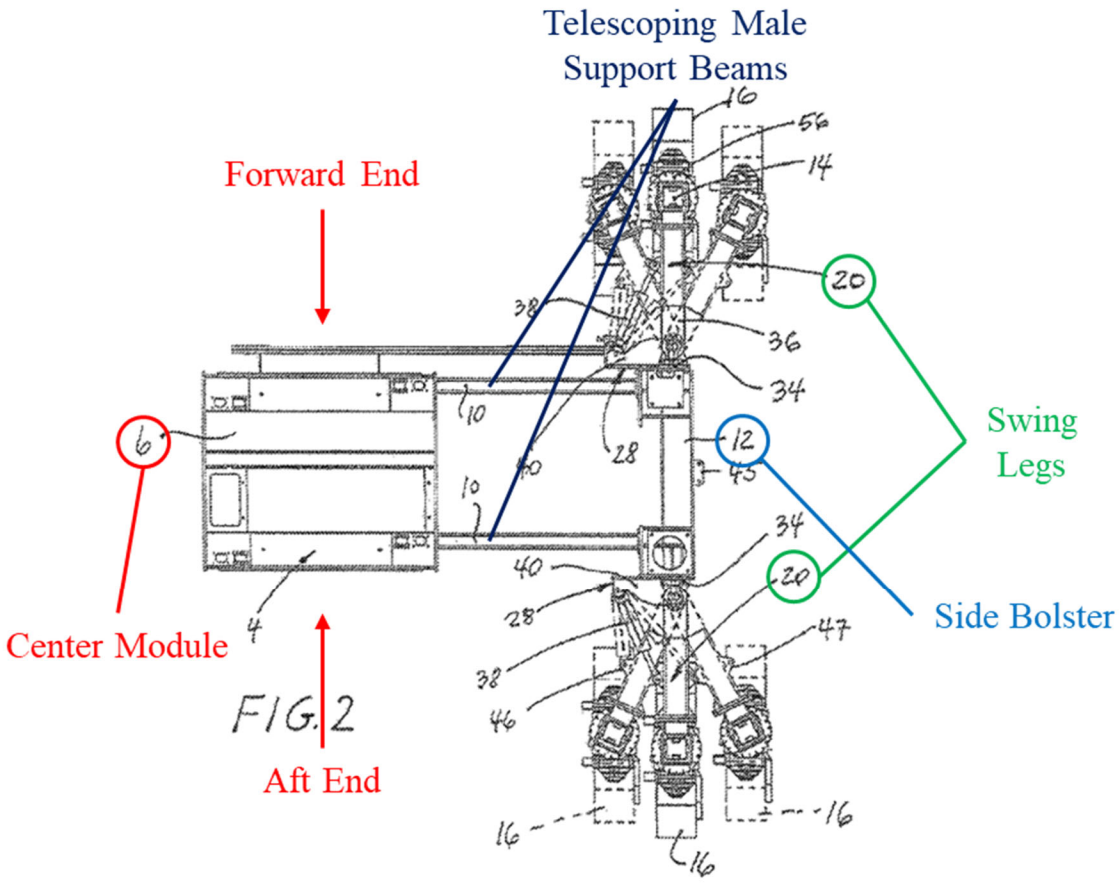
sides of the center module and laterally extend and retract from the center module to move the side bolsters and thus change the paver's width. *Id.*, ¶¶[0005], [0033]. Moreover, the swing legs disclosed in Guntert are "pivotally mounted on a hinge bracket that is secured to the front (or aft) ends ***of the side bolsters*** of the paving machine." *Id.*, ¶[0015] (emphasis added). This can be seen in Figure 2 of Guntert, below.

506 F.3d 1370, 1378 (Fed. Cir. 2007) (obtaining the benefit of an earlier application's filing date requires "each application in the chain leading back to the earlier application" to "comply with the written description requirement"). Provisional Application No. 61/318,223, to which the '571 patent claims priority, largely mirrors Guntert and contains no additional relevant disclosure. *See* Ex. 1031.



Id., Fig. 2 (annotated top-down view). Figure 6 discloses another embodiment in which a dowel bar inserter is attached to the aft ends of the side bolsters and the aft swing legs are attached to the aft ends of rearwardly extending bolster extensions 114. *Id.*, ¶¶[0061]-[0062]. This is shown below.

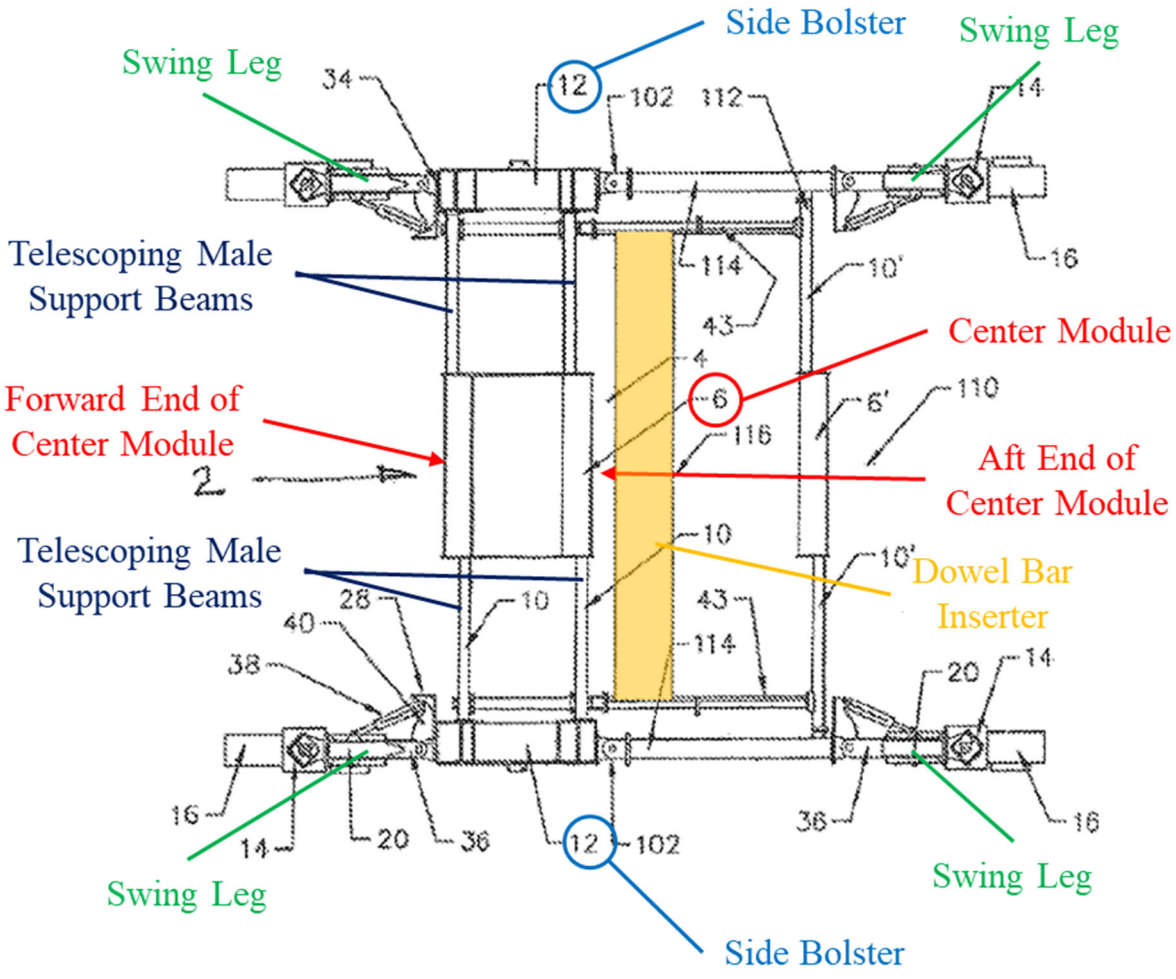


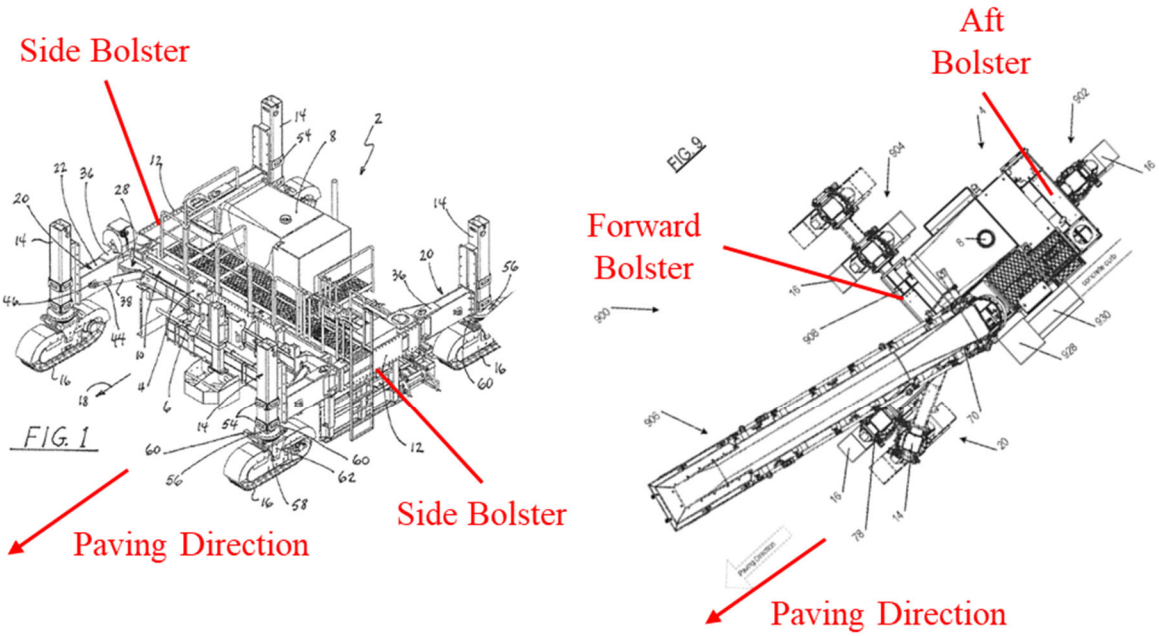
FIG. 6

Id., Fig. 6 (annotated top-down view). In this embodiment, the swing legs are still coupled to side bolsters that connect to lateral sides of the center module via the telescoping male support beams. Consistent with these embodiments, Guntert contains a claim to "a bolster laterally movably connected to respective lateral sides of the center module for changing a spacing between the bolsters." Guntert,

Claim 1. This limitation also appeared in claim 1 of the patent that issued from Guntert. U.S. Patent No. 8,459,898 ("the '898 patent"; Ex. 1032), 15:15-17.[3]

Differences in designs where the swing leg and bolster combinations attach through the sides of the center module as opposed to the forward and aft ends of the center module (i.e., the new matter designs) can be seen by comparing the two figures below. Singhose, ¶¶38-39.

[3] Notably, claim 1 of the '020 patent recites "at least two *forward bolsters*" and "at least two *aft bolsters*." Ex. 1029, 15:35-38 (emphasis added). The claim makes clear, however, that these bolsters are "laterally and movably connected to ***respective lateral sides of the center module***," just like the ***side*** bolsters in Guntert. *Id.* (emphasis added). Moreover, even if G&Z incorrectly argues this claim provides support for bolsters connected to the ***forward and aft ends of the center module***, Guntert is still prior art because its publication predates the filing of the '020 patent by nearly five years.

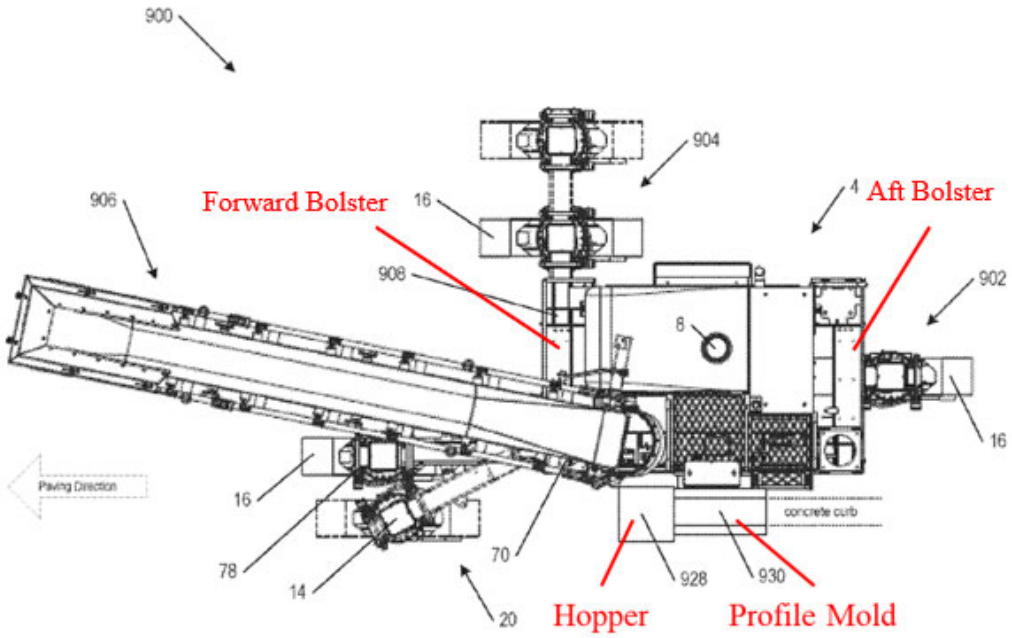


Original Figure New Matter

Guntert, Fig. 1 (annotated, left); Ex. 1001, Fig. 9 (annotated, right). In the four-track configuration depicted on the left (where the bolsters attach to the *sides* of the center module), the frame "straddles the concrete roadway or airfield pavement section that is being paved." Guntert, ¶¶[0002], [0034]; Singhose, ¶38. The side bolsters move laterally "to change the widths of the tractor frame and the remainder of the paving machine." Guntert, ¶[0005]. This allows paving kits of different widths to be "suspended below the tractor frame" and thus for different widths of concrete sections to be paved. *Id.*, ¶¶[0003], [0012]; Singhose, ¶38.

In contrast, Figures 9-13E (depicting bolster attachments to the center module's forward and aft ends) do not include a paving kit suspended below the frame, but rather include a conveyor 906 that conveys concrete to a hopper 928 attached to a profile mold 930, both of which are attached to the *lateral side of the frame* and are used for paving structures such as barrier walls, curbs, and gutters (i.e., structures that do not pass underneath the center of the machine). Ex. 1001, 17:23-25, 17:41-62; Singhose, ¶39. The '571 patent specification states that the hopper and profile mold can be on either lateral side of the tractor frame but does not disclose that these components can be suspended beneath the frame, as in Figures 1-8E. Ex. 1001, 17:56-62; Singhose, ¶39. Figure 9 depicts the hopper and profile mold on the lateral side proximate to the forward swing leg, configured to form a curb, as shown below. Ex. 1001, 17:56-58.

FIG. 9



Id., Fig. 9 (annotated).

Indeed, suspending the paving kit of Figure 1 beneath the frame in Figures 9-13E would cause the aft leg to roll over and ruin the soft, unset concrete it just laid. Singhose, ¶40; Ex. 1001, 1:42-47, 9:20-22, Figs. 9-13E. With the hopper and profile mold on a lateral side of the frame, it is unnecessary to have side bolsters that move laterally to change paver width because the tracks need not straddle the section being paved. Singhose, ¶40. By instead including bolsters that connect to the forward and aft ends of the center module and attaching legs to those bolsters, the positions of the legs and tracks can be more freely adjusted to maneuver the

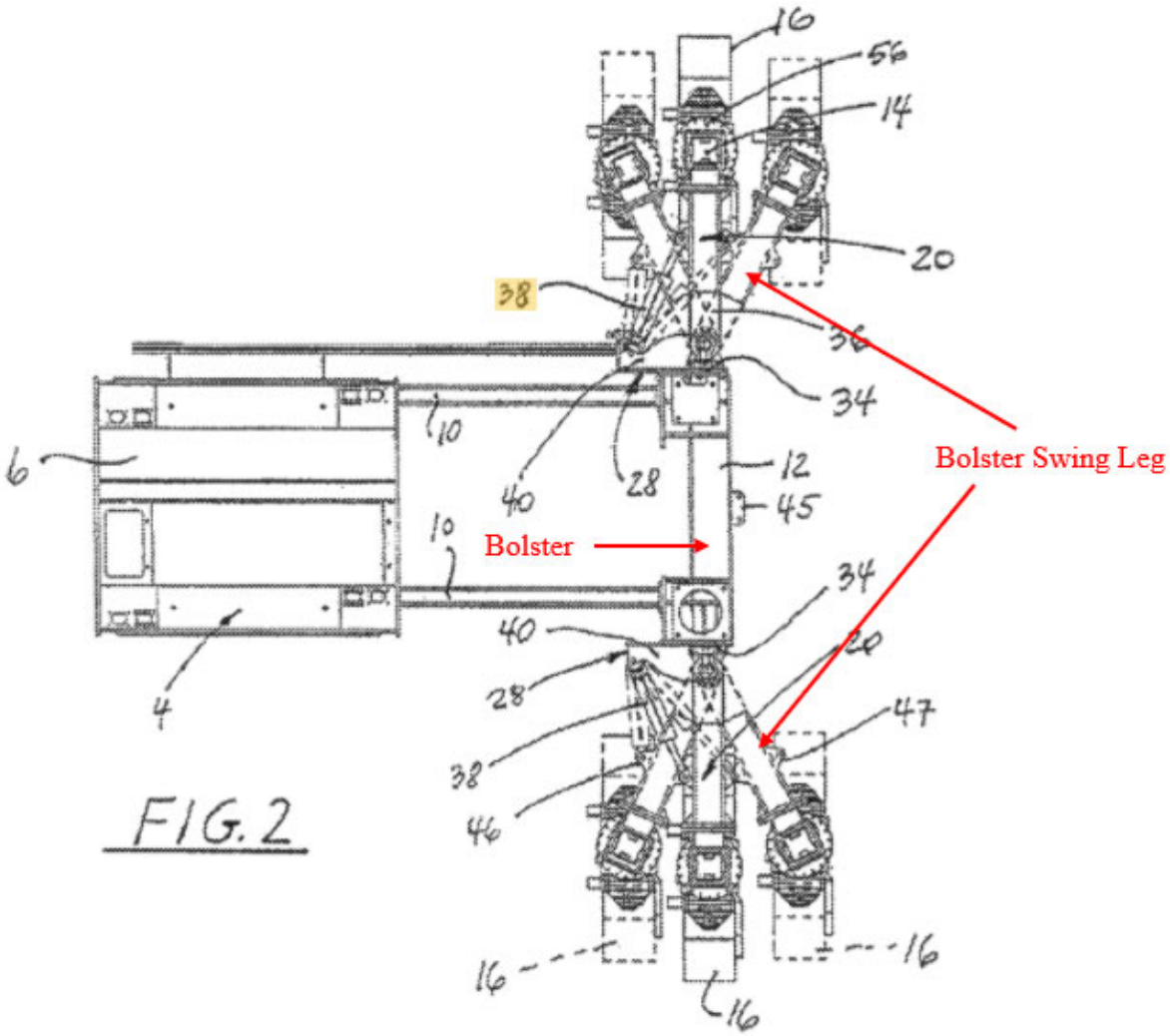
paver without disturbing the unset concrete, such as for tight-radius paving, Ex. 1001, 16:47-53, or to shift the paver's center of gravity when profile molds of different sizes are used. Singhose, ¶40. For these reasons, the new matter G&Z added in the '571 patent where bolsters were connected to the forward and aft ends of the center module (and a slipform mold was attached to the lateral side) yield a different paving design and a different paving result when compared to designs where the bolsters attach to the sides of the machine. *Id.*

The different paver configurations also lead to different transport profiles. Singhose, ¶¶41-42. Guntert discloses that "[f]or loading the paving machine for transport to a different site on a trailer over standard highways, it is necessary to reduce the transport width of the maximum allowable width for highway vehicles." Guntert, ¶[0057]. Because the distance between the side bolsters typically exceeds the maximum width, Guntert discloses rotating each swing leg "laterally outward of bolsters 12" so that the swing legs and crawler tracks are perpendicular to the paving direction, and then moving the machine sideways onto a trailer. *Id.*, ¶¶[0014], [0041], [0057]-[0060]; Singhose, ¶41. In contrast, the three-legged paver frame is "sufficiently narrow" such that "the three-leg paving machine will fit onto the bed of a trailer" simply by moving the legs "relatively close in toward the tractor frame." Ex. 1001, 16:32-37, 17:64-66.

During prosecution, the Applicant relied extensively on the new matter added with the '571 patent when arguing that its new claims had support in the specification. In particular, after canceling a claim where the bolsters were "laterally and movably ***connected to respective lateral sides*** of the center module," the Applicant introduced new claims where the bolsters were connected to the ***forward and aft ends of the center module***, and then told the Examiner that "*the front and aft ends* of the paving machines *claimed herein correspond to* the paving direction indicated within *Figs. 9-13E*" (which disclose new matter). Ex. 1004, 32, 99-108 (emphases added); *see* Section II.B. At bottom, no priority application provides support for the claimed forward and aft bolsters "connected to the [forward/aft] end of the center module"—a design required in every '571 patent claim. Thus, no claim in the '571 patent is entitled to an effective filing date before the patent's actual filing date of June 14, 2017. 35 U.S.C. § 100(i)(1).

Notably, Guntert repeatedly refers to its swing legs as "bolster swing legs." *E.g.*, Guntert, ¶¶[0015], [0036], [0043]. "Bolster swing leg" does not refer to an apparatus where the bolster and swing leg components have been combined—it simply refers to the swing leg. For example, Figure 7 shows *only* the physical components of the swing leg and the hinge bracket attached to it (i.e., no bolster component is shown in the figure). *Id.*, Fig. 7. The specification defines this isolated set of components shown in Figure 7 as "the bolster swing leg that is

pivotally secured to the hinge bracket." *Id.*, ¶[0031]. Moreover, other figures in the patent and related text identify the swing leg as "bolster swing leg 20," and then separately identify the bolster components in those same figures as "bolster 12" or "side bolsters 12." *See, e.g.*, *id.*, Figs. 1-2 & 6-6B, ¶¶[0033]-[0042]. This is shown in Figure 2 below and is repeated in other figures as well. *Id.*



Id., Fig. 2 (annotated).

The patent also uses the same terminology ("bolster swing leg") even when it makes clear that no bolster at all is used. Singhose, ¶46. For instance, in the "Background of the Invention" section, Guntert explains that "*bolster swing legs* with jacking columns and crawlers can be . . . relocated and *mounted directly to the front and rear of the tractor center module*, to the outside of the side bolsters or directly to the outside of the tractor center module in some less conventional paving applications." Guntert, ¶[0004] (emphases added). Thus, here the patent recognizes that the bolster swing leg can be mounted *directly* to the frame, rather than indirectly using a bolster. Importantly, the description quoted above from ¶[0004] in Guntert does not disclose a *bolster* connected to the front or rear of the center module, and a swing leg attached to that bolster, as claimed. It simply discloses a swing leg *mounted directly to* the front and rear of the center module (i.e., no indirect connection through an intermediary bolster). To be sure, no application in the family chain preceding the '571 patent disclosed using a bolster connected to the front or rear of the center module. This was new matter added by the application for the '571 patent.

As explained above, when considering four-track versus three-track configurations, design distinctions regarding whether bolsters are used and how/where components attach are important because they affect where the paving kit attaches and how a paver operates (e.g., a four-track machine with side bolsters

straddles the roadway and distributes concrete from beneath the machine, Ex. 1001, 8:62-66, while a three-track machine with forward and aft bolsters dispenses concrete from the side of the machine to pave barriers, curbs, and gutters, *id.*, 17:23-25). Singhose, ¶47. Claim 1 of the '571 patent sets forth specific designs for a three-track paver that has bolsters connected to the forward and aft ends of the center module. In particular, claim 1 defines every side of the center module ("forward end," "aft end," and "lateral sides"), and explains that one bolster connects to the "forward end" of the center module and another bolster connects to the "aft end" of the center module. The claims then recite a chain of components (e.g., swing legs, telescoping legs, hinge brackets, jacking columns, and three crawler tracks) that connect to the forward and aft ends of the center module *indirectly through the forward and aft bolsters that connect to the forward and aft ends of the center module*. G&Z changed its claims during prosecution from connecting to the *sides* of the center module to connecting to the *forward and aft* ends of the center module. Ex. 1004, 32, 99. And then G&Z *expressly* tied these new claim features to the new matter recited in the continuation-in-part application. *Id.*, 107-08.

Given this prosecution history, and the pure lack of disclosure in any application preceding the '571 patent of a bolster design where a bolster connects to each forward and aft end of the center module, G&Z cannot say this new matter

is not new, and claims 1-15 of the '571 patent are only entitled to a priority date associated with when the new matter was disclosed (June 14, 2017). Singhose, ¶49; *PowerOasis*, 522 F.3d at 1306 (satisfying the written description requirement "requires that the written description actually or inherently disclose the claim element"); *id.* at 1309-10 (holding that a CIP was not entitled to claim priority where the original application only disclosed a user interface that was part of a vending machine, rather than a customer interface separate from the vending machine); *Lockwood v. Am. Airlines, Inc.*, 107 F.3d 1565, 1572 (Fed. Cir. 1997) (holding that the patentee "claimed a distinct invention from that disclosed in the specification" and that it is insufficient "that the disclosure, when combined with the knowledge in the art, would lead one to speculate as to modifications that the inventor might have envisioned, but failed to disclose").[4]

[4] To the extent G&Z argues that unlabeled components in Figures 1-8E of Guntert provide written description support for a forward bolster, this argument lacks merit. For example, in Figure 1 of Guntert, the leader line identifying element 6, which corresponds to "center module or platform 6," terminates on a structure that appears in front of the leader lines identifying "main tractor frame 4" and "telescoping male support beams 10." Guntert, ¶[0033], Fig. 1. Thus, Guntert treats this structure as part of the center module. Other components on the front of

Additionally, other claim limitations lack written description support in the priority applications, such as "a molded form" (claim 1); "a laterally telescoping leg, configured to extend from the center module in a direction perpendicular to the forward end" (claim 8); "a linear position transducer between the laterally telescoping leg and the forward bolster" (claim 8); and "a conveyor arranged to deliver semi-solid concrete to a hopper" (claim 14). Guntert, ¶51. For these independent reasons, the claims in the '571 patent are not entitled to an effective filing date earlier than June 14, 2017.

III. STATEMENT OF PRECISE RELIEF REQUESTED

Claims 1-15 are unpatentable and should be canceled in view of the following grounds.

A. Prior Art

- Guntert, published on September 29, 2011; prior art under § 102(a)(1).

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the machine correspond to components used for paving, such as "a spreader plow." *Id.*, ¶[0035]; Singhose, ¶50. Moreover, Guntert explains what a bolster is and where it connects to the center module—multiple times throughout its disclosure—and it never defines any of the unlabeled features described in this footnote as a bolster. There are also no unlabeled components in Figures 1-8E of Guntert on the *aft* end of the center module that could correspond to an aft bolster. Singhose, ¶50.

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- CIII; prior art under § 102(a)(1), as explained in Section VII.A.2.b.
- U.S. Patent Application Publication No. 2015/0354149 to Dahm et al. ("Dahm"; Ex. 1030), filed on June 9, 2014, published on December 10, 2015; prior art under § 102(a)(1).

B. Challenges

Ground	Challenged Claims	Basis	Prior Art
1	1-7, 9-15	103	Guntert and CIII
2	8	103	Guntert, CIII, and Dahm

IV. DISCRETIONARY DENIAL IS NOT WARRANTED

Petitioner has not previously challenged the '571 patent in any AIA trial, no other AIA trial or Patent Office proceeding is pending against the '571 patent, and no reference in the asserted grounds of this Petition was presented to the Patent Office during prosecution. *See* Ex. 1001, (56) (References Cited). The patent that issued from Guntert (U.S. Patent No. 8,459,898) is part of the '571 patent's chain of priority and was included in a List of References Cited, Ex. 1004, 86, but it was not relied on in any rejection, let alone applied to the claims with CIII, as asserted in this Petition. "The Board has consistently declined exercising its discretion under Section 325(d) when the only fact a Patent Owner can point to is that a reference was disclosed to the Examiner during the prosecution." *Amgen Inc. v.*

Alexion Pharm., Inc., IPR2019-00739, Paper 15 at 62 (PTAB Aug. 30, 2019); *see also Amber.io, Inc. v. 72Lux, Inc.*, IPR2020-00015, Paper 8 at 19-20 (PTAB Apr. 1, 2020) (evaluating reference disclosed in IDS under *Advanced Bionics*[5] and *Becton Dickinson*[6] before concluding that a citation of a reference in an IDS alone, without any substantive consideration of that reference during prosecution, did not warrant a discretionary denial under 325(d)). Therefore, the facts here do not support a discretionary denial under *General Plastic*[7] or 35 U.S.C. § 325(d). The

[5] *Advanced Bionics, LLC v. MED-EL Elektromedizinische Gerate GmbH*, IPR2019-01469, Paper 6, 7 (PTAB Feb. 13, 2020).

[6] *Becton, Dickinson & Co. v. B. Braun Melsungen AG*, IPR2017-01586, Paper 8 (PTAB Dec. 15, 2017).

[7] *General Plastic Indus. Co., Ltd. v. Canon Kabushiki Kaisha*, IPR2016-01357, Paper 19 (PTAB Sept. 6, 2017) (precedential).

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stage of the corresponding district court litigation also does not support a discretionary denial under *NHK Spring*[8] or the *Fintiv*[9] factors, as discussed below.

A. Factor 1: Whether the court granted a stay or evidence exists that one may be granted upon institution

GOMACO intends to request a stay of the district court case after it files IPR petitions against all asserted patents in the case. The Board has stated that it "decline[s] to infer" regarding "how the District Court would rule should a stay be requested by the parties in the parallel case." *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 15 at 12 (PTAB May 13, 2020) (informative). Thus, Factor 1 is at least neutral.

Factor 1 ultimately favors institution, however, because instituting will resolve several invalidity issues presented in district court, may resolve the entire district-court case on the '571 patent, and may simplify other issues even if the Board confirms the challenged claims. As Federal Circuit Judge Bryson explained when sitting by designation, "the most important factor" regarding "whether to

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[8] *NHK Spring Co., Ltd. v. Intri-Plex Techs., Inc.*, IPR2018-00752, Paper 8 (PTAB Sept. 12, 2018) (precedential).

[9] *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 (PTAB Mar. 20, 2020) (precedential) ("*Fintiv I*").

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grant a stay" is "the prospect that the [IPR] proceeding will result in simplification of the issues." *NFC Techs. LLC v. HTC Am., Inc.*, 2015 WL 1069111, *4 (E.D. Tex. Mar. 11, 2015). Judge Bryson explained that this simplification can take several forms, including:

- alleviating "discovery problems relating to prior art;"
- possible dismissal of the lawsuit;
- possible settlement and conservation of court resources;
- streamlining "[i]ssues, defenses and evidence" for trial;" and
- reduced costs for the parties and the court.

Id. Here, institution is likely to achieve these benefits given the overlap in the issues and the statutory estoppel that will apply when the Board issues its Final Written Decision.

B. Factor 2: Proximity of the court's trial date to the Board's projected statutory deadline for the final written decision

The district court trial is scheduled to occur at around the presumed deadline for the Board to issue its Final Written Decision in this case. Given the November 6, 2020, filing date of this IPR and assuming one week for the Board to issue its Notice of Filing Date Accorded, the Final Written Decision is presumed to issue in late-April/early-May. The district court trial is scheduled to begin in April 2022. Ex. 1019, 3. Moreover, while the Board's decisions generally have not been

delayed by COVID-19, numerous district court schedules have been delayed already, and the ripple effects are expected to cause delays for years to come. Thus, at best, the district court trial proceedings may be ongoing when the Board issues its Final Written Decision, though it is possible that the court will delay the trial further given the circumstances, and that the Final Written Decision will issue before the trial. This factor, therefore, weighs in favor of institution.

C. Factor 3: Investment in the parallel proceeding

To date, the parties and district court have invested a small fraction of the resources required to take the parallel case through trial. G&Z filed its original complaint in February 2020 and served it in March 2020. *See* Ex. 1018. But that complaint did not meet federal pleading requirements. After GOMACO filed a motion to dismiss, G&Z filed an amended complaint in June 2020. *Id.* The parties have since exchanged initial contentions, with G&Z serving its initial infringement contentions on June 19, 2020—about four and a half months ago. Ex. 1015, 2. As the Board has explained, "[i]f the evidence shows that the petitioner filed the petition expeditiously, such as promptly after becoming aware of the claims being asserted, this fact has weighed against exercising the authority to deny institution under *NHK*." *Fintiv I*, at 11. This factor weighs in favor of institution.

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D. Factor 4: Overlap between issues in the petition and the parallel proceeding

GOMACO's invalidity contentions in district court identify prior art used in this petition, but that art is listed alongside several other prior-art disclosures, many of which are not present in this petition. *See* Ex. 1020 (collecting cover sheets from GOMACO's district-court invalidity contentions on the '571 patent, showing numerous prior-art combinations not at issue here, including several relying on four prior art machines as base references that cannot be asserted here). The Board has declined to deny institution in similar situations because "there is no guarantee" the district court will even consider the prior-art references or combinations asserted in the petition. *Intel Corp. v. VLSI Tech. LLC*, IPR2019-01192, Paper 15 at 12 (PTAB Jan. 9, 2020). And as discussed regarding Factor 1, the presence of overlapping issues increases the likelihood of a stay. Consequently, this factor is either neutral or weighs in favor of institution.

E. Factor 5: Whether the petitioner and district-court defendant in the parallel proceeding are the same party

GOMACO is the defendant in the parallel litigation and petitioner here. The Board has noted, however, that this "is far from [] unusual." *Sand Revolution II, LLC, v. Cont'l Intermodal Grp.-Trucking LLC*, IPR2019-01393, Paper 24 (PTAB June 16, 2020) (informative). At worst, this factor should be deemed neutral.

Patent Owner, Guntert & Zimmerman - Ex. 2002, p. 42

Moreover, because GOMACO filed this IPR as Congress intended and authorized by statute (i.e., as a litigation defendant), this factor should favor institution.

F. Factor 6: Other circumstances impacting the Board's exercise of discretion, including the merits

The challenged claims are unpatentable as explained below, and the prior art has not been considered by the Patent Office in any office action. Additionally, GOMACO's IPR challenges are the only challenges to the '571 patent that have ever been before the Board, which favors institution. *See, e.g.*, *Google LLC v. Uniloc 2017 LLC*, IPR2020-00115, Paper 10 at 6 (PTAB May 12, 2020) (a "crucial fact" when exercising discretion to deny is whether "the challenged patent is currently the subject of [other] instituted IPRs"). Moreover, there is a strong public interest against "leaving bad patents enforceable," which also favors institution. *Thryv, Inc. v. Click-To-Call Techs., LP*, 140 S. Ct. 1367, 1374 (2020).

Because five of the six *Fintiv I* factors are neutral or favor institution, and the remaining factor (Factor 5) *should* favor institution, GOMACO respectfully requests that the Board institute IPR.

V. LEVEL OF ORDINARY SKILL IN THE ART

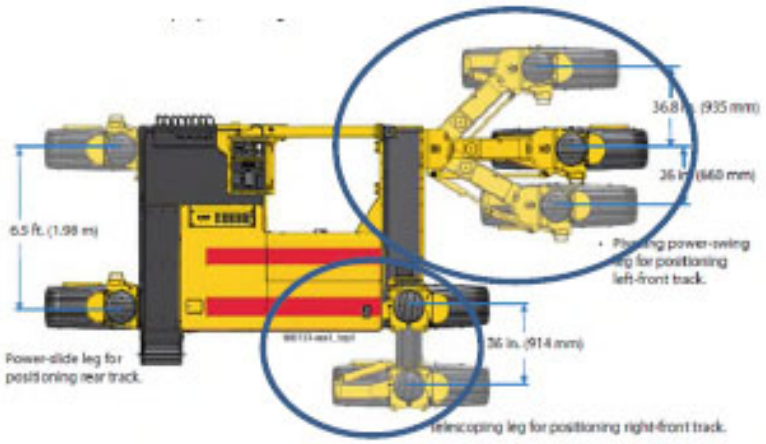
A person of ordinary skill in the art ("POSITA") pertinent to the '571 patent would have had at least a four-year degree in mechanical engineering or a closely related field and at least two years of experience designing, developing, or

operating heavy machinery, including their components and control systems. Additional education could substitute for professional experience and significant work experience—such as working with, servicing, or operating heavy machinery in the field—could substitute for formal education. Singhose, ¶22.

VI. CLAIM CONSTRUCTION

A. "mechanically coupled" (Claims 1, 11, 8, 13)

"Mechanically coupled" should be construed to mean "directly or indirectly coupled." Singhose, ¶¶52-53. The '571 patent claims repeatedly refer to components as "mechanically coupled" that are not directly coupled to each other. For instance, claim 1 recites crawler tracks "mechanically coupled" to bolsters, but every connection between the crawler tracks and bolsters described in the '571 patent is an indirect coupling—i.e., the crawler tracks are "secured to the lower ends of the jacking columns" and indirectly coupled to the bolsters through other components, such as a jacking column and swing leg. Ex. 1001, 8:50-55. G&Z's infringement contentions confirm this construction, as they accused machines with crawler tracks that only indirectly couple to the identified bolsters, as shown with G&Z annotations below. Ex. 1016, 3-4.



Id., 3.

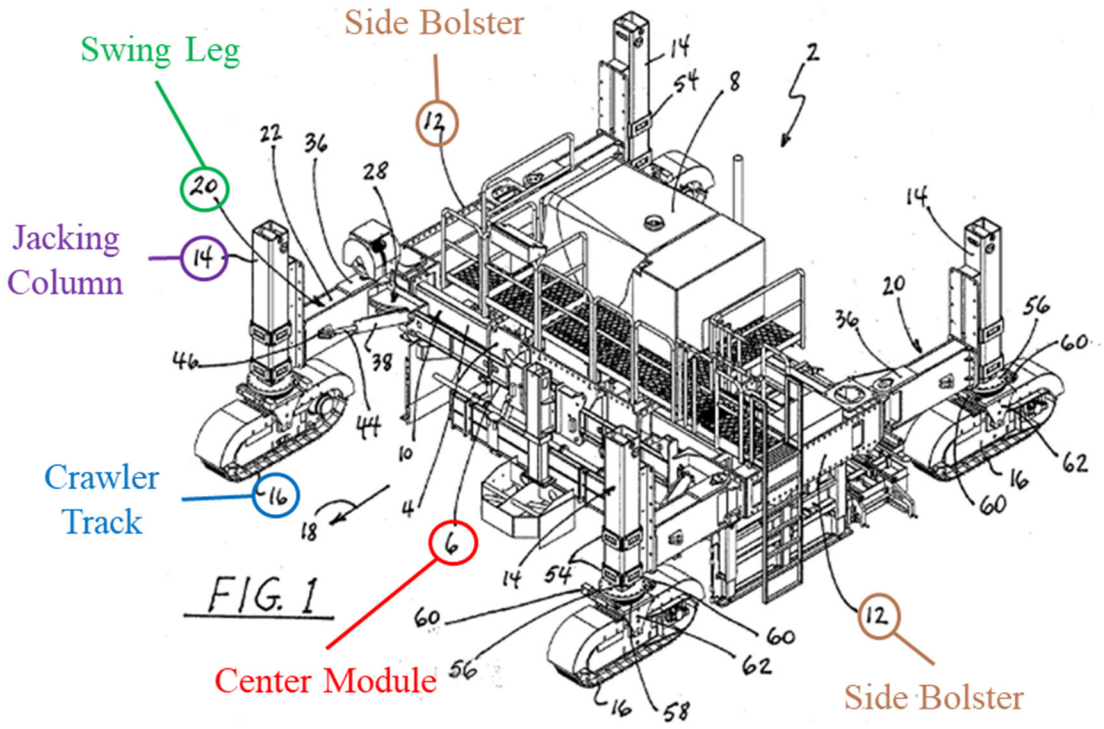
The parties dispute constructions of other '571 patent terms in district court. Ex. 1021, 5-7 (showing disputes over "swing leg," "hinge bracket," "feedback loop," and "laterally telescoping leg" terms). The Board need not resolve these disputes here, however, because the asserted prior art discloses embodiments within the scope of both parties' constructions (as explained below). Accordingly, the Board need not explicitly construe the outer bounds of the claims in this proceeding. *See, e.g.*, *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999) ("[O]nly those terms need be construed that are in controversy, and only to the extent necessary to resolve the controversy").

VII. DETAILED EXPLANATION AND EVIDENCE

A. Ground 1: Guntert and CIII Renders Obvious Claims 1-7 and 9-15

1. Summary of Guntert

Guntert is the publication of the application that issued as U.S. Patent No. 8,459,898, to which the '571 patent claims priority (but is not entitled to priority, *see* Section II.C). Accordingly, its disclosure is similar to that of the '571 patent, though it lacks the disclosures at Ex. 1001, 15:53-22:36 and Figures 9-13E. For example, it discloses a slipform paver with a center module, a side bolster on each lateral side of the center module, a swing leg on each forward and aft end of the side bolsters, and a jacking column and crawler track coupled to the free end of each swing leg. Guntert, ¶¶[0015], [0033], [0036].

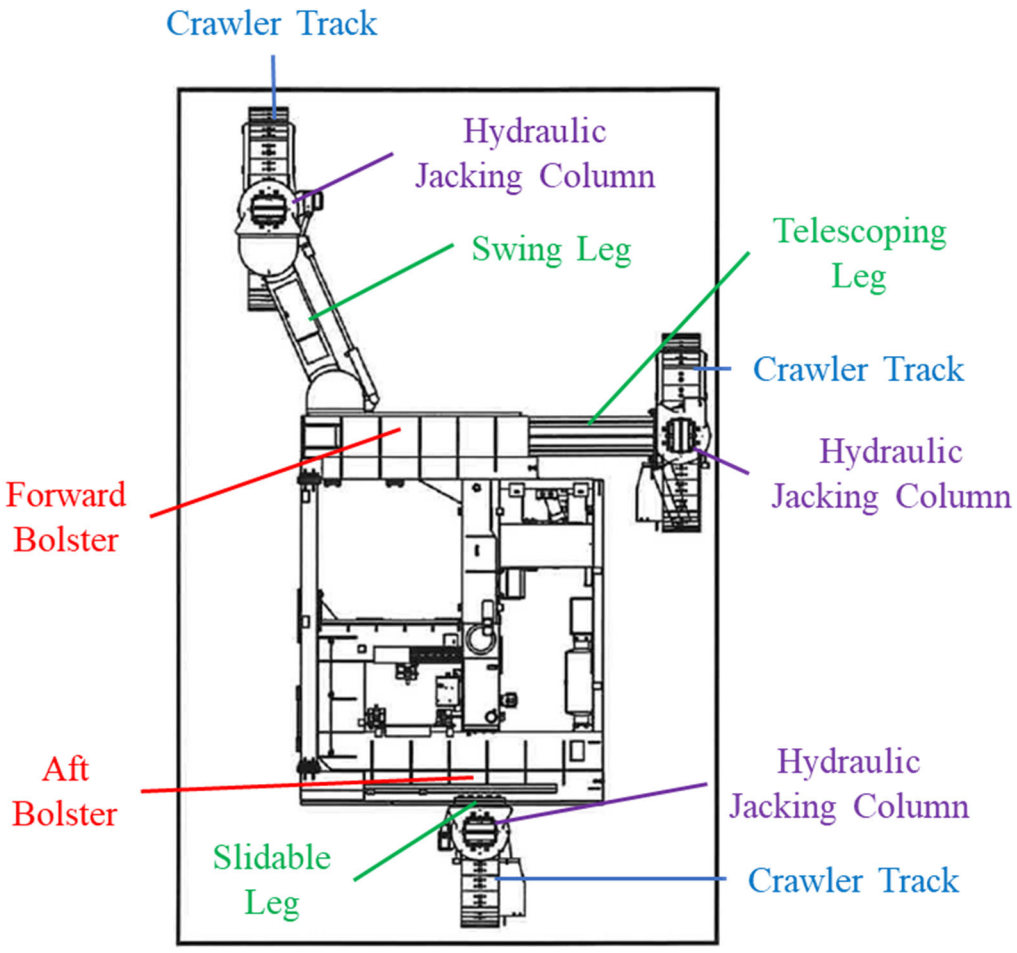


Id., Fig. 1 (annotated).

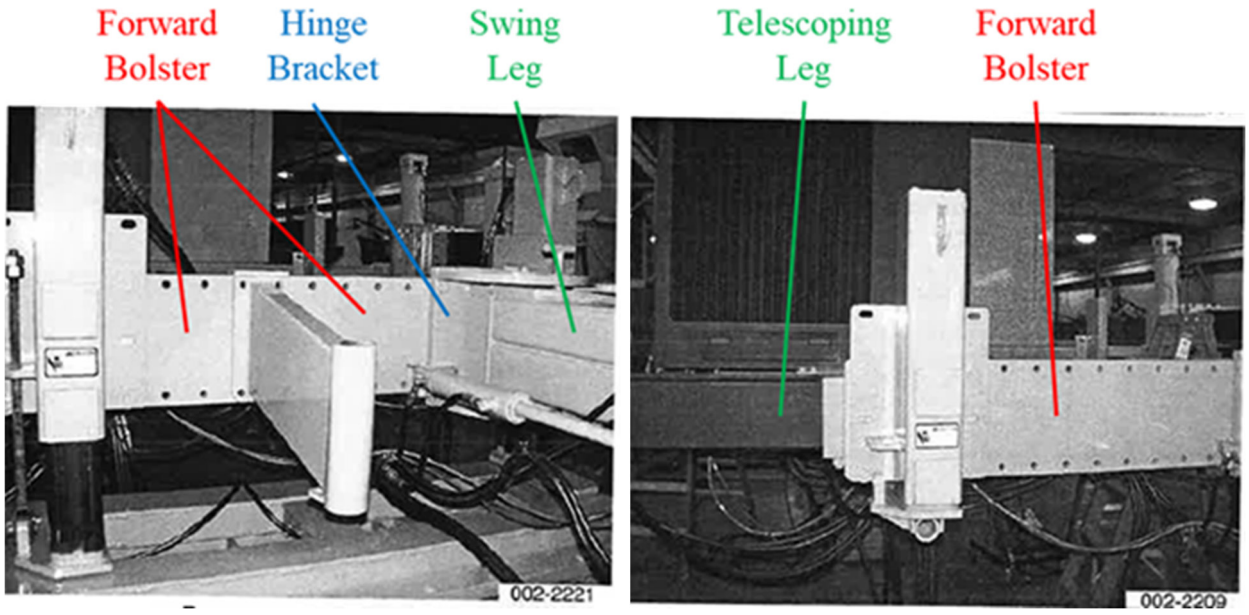
2. Summary of CIII

a. Technical Disclosure

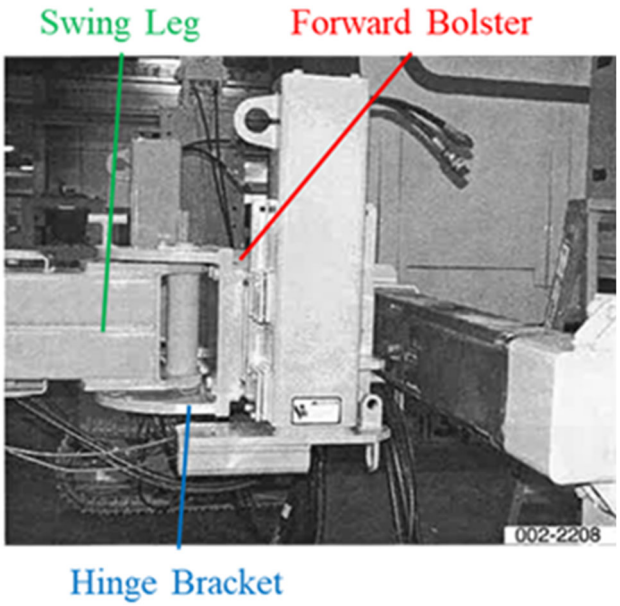
CIII discloses a slipform paver with a pivoting swing leg, a laterally telescoping leg, and a slidable rear-mounted leg. CIII, 3-14, 6-3, 6-6. The pivoting swing leg attaches to a front bolster via a hinge bracket, the laterally telescoping leg telescopes in and out of the front bolster, and the slidable rear-mounted leg attaches to an aft bolster, as shown in the images below.



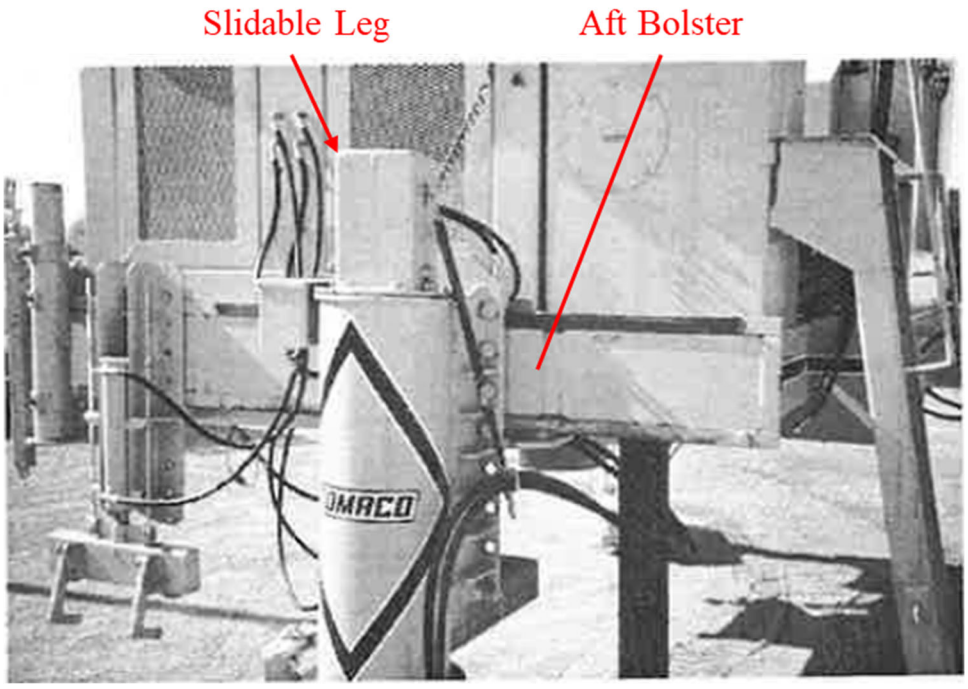
Id., 6-3 (annotated top-down view).



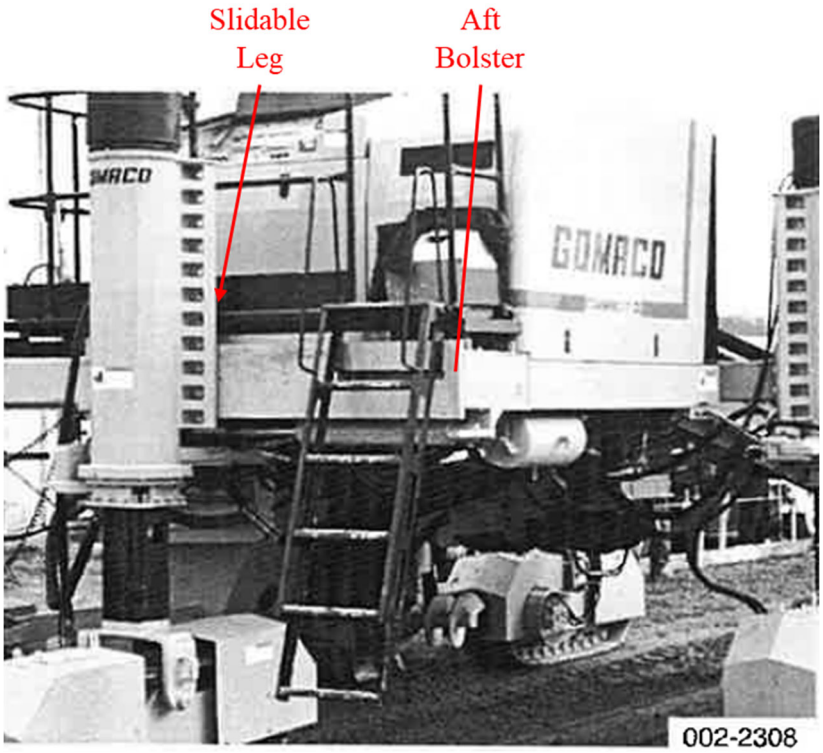
Id., 6-2 (annotated).



Id., 3-23.

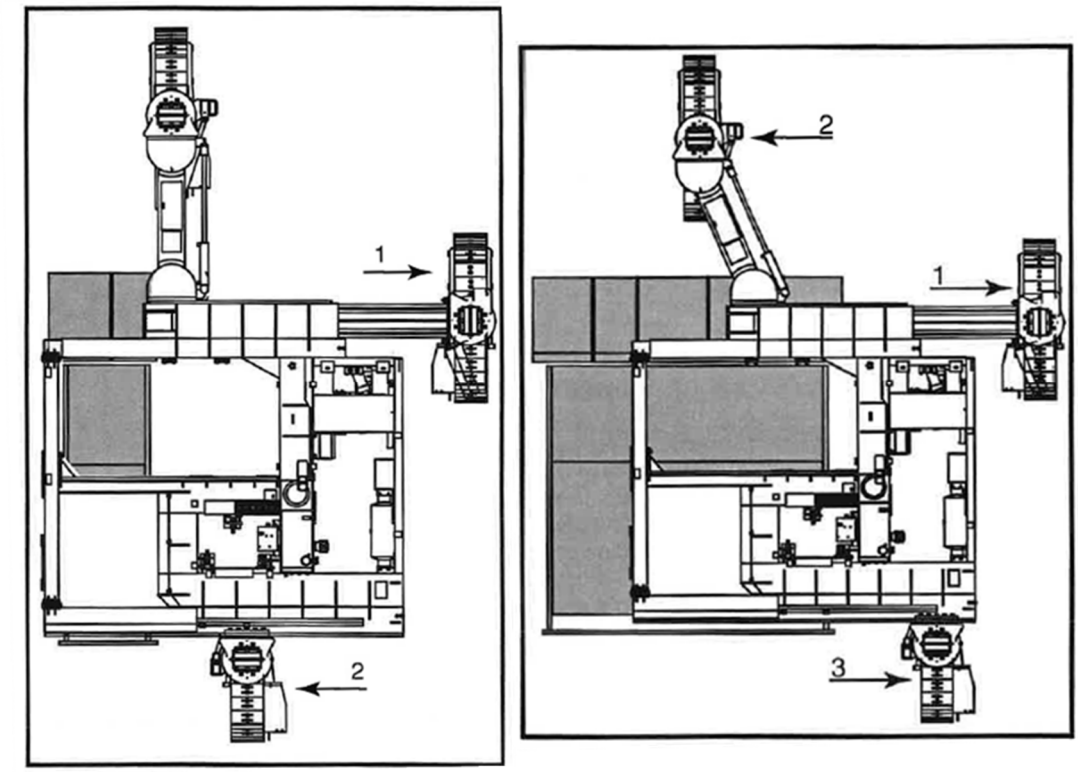


Id., 3-13 (annotated).



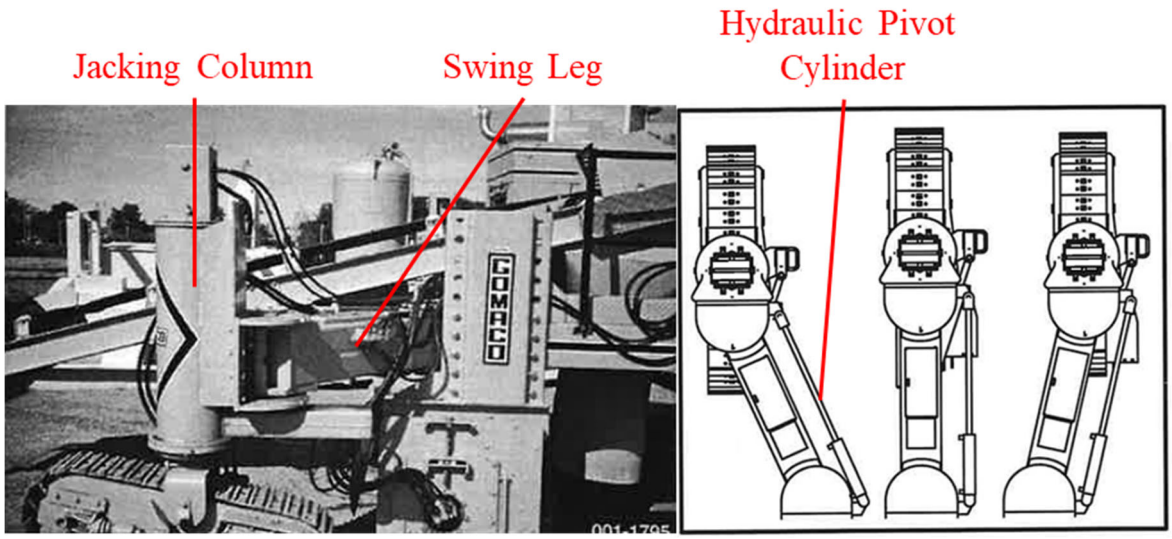
Id., 2-32 (annotated).

CIII describes different leg positions depending on the job. *Id.*, 3-14.



Id. (top-down views showing positioning for curb and gutter projects (left) and sidewalk projects (right)). The swing leg, mounted to the front bolster on one end and the hydraulic jacking column on the other, can pivot left and right. *Id.*, 3-17–18, 2-6.

CIII also discloses a hydraulic pivot cylinder that swings the front left leg left or right. *Id.*, 3-17–18, 2-6.



Id., 3-17–18 (annotated).

b. CIII is a Printed Publication

CIII, published by GOMACO before June 14, 2016, is a "printed publication" under 35 U.S.C. § 102. A reference is a printed publication if it was "publicly accessible," meaning it was "disseminated or otherwise made available to the extent that persons interested and ordinarily skilled in the subject matter or art exercising reasonable diligence, can locate it." *Hulu, LLC v. Sound View Innovations, LLC*, IPR2018-01039, Paper 29 at 10-11 (PTAB Dec. 20, 2019) (precedential).

Although "a petitioner need not establish that specific persons actually accessed or received a work to show that the work was publicly accessible," in this case, GOMACO distributed over 100 copies of CIII to over 50 customers and/or dealers who purchased Commander III machines. *Id.* at 10; *see also GoPro, Inc. v.*

Contour IP Holding LLC, 908 F.3d 690, 695 (Fed. Cir. 2018) (document distributed to dealers with no restrictions and intended to reach the general public qualified as a printed publication).

GOMACO's Technical Publications Manager, Shari Simmons, oversaw distribution of CIII from 2005-2007 and kept detailed records. *See* Ex. 1012, ¶¶1-26 and Appendix. Those records include the database entries and scanned paper files shown in Exhibits 1100-1154. As the Simmons declaration and Appendix show, Ms. Simmons sent *numerous* physical copies of CIII to dealers and/or customers before the '571 patent's effective filing date. In most instances, she also provided a CD containing a digital copy of CIII. *Id.*, ¶22. For international purchasers, she also wrote the machine serial number on CIII's cover. *Id.*, ¶¶23-24; Exs. 1151-54. Her records further identify UPS tracking information for packages shipping CIII, the date the dealers and/or customers received those packages, and the names of people who signed for them. *See* Ex. 1012, ¶¶1-26 and Appendix; Exs. 1100-54.

Moreover, no CIII described in the Simmons declaration or Appendix was subject to a non-disclosure agreement or secrecy obligation. Ex. 1012, ¶26. Nor does CIII itself bear any markings suggesting that dissemination was prohibited or restricted. *See* CIII. Instead, CIII has a 2002 copyright date and encourages users to contact GOMACO for the latest version of the manual. CIII, 3, 4.

Patent Owner, Guntert & Zimmerman - Ex. 2002, p. 53

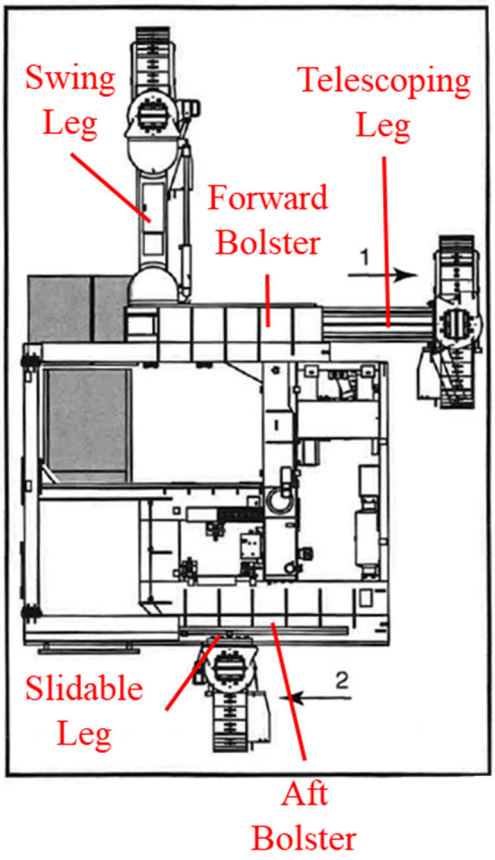
Because GOMACO distributed over 100 copies of CIII to over 50 customers and/or dealers without any expectation of secrecy, CIII was a publicly accessible, prior-art "printed publication" under § 102.

3. Rationale for Combining Guntert and CIII

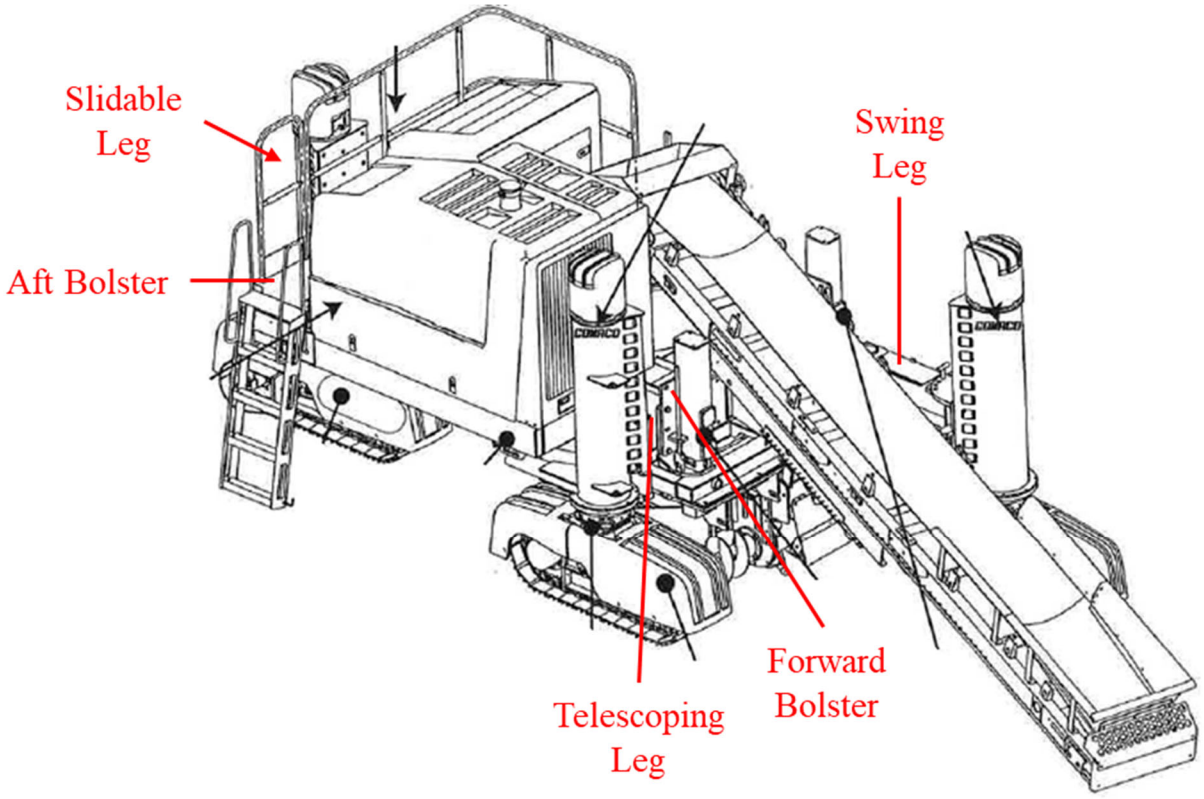
A POSITA would have been motivated to combine Guntert and CIII and would have had a reasonable expectation of success in doing so. Singhose, ¶¶58-65. It would have been obvious to rely on CIII's disclosures regarding three-track slipform pavers in view of Guntert's teachings on slipform pavers. Guntert and CIII both disclose slipform pavers having at least one swing-leg assembly and are thus analogous art and in the same field of endeavor as the '571 patent. Guntert, ¶[0002]; CIII, 3-13–18; Singhose, ¶59. Guntert "focus[es]" on how "bolster swing arms and the orientation of the crawlers can be changed and controlled in the more conventional paving configuration of the machine" and describes the benefits of its swing-leg and jacking column designs. Guntert, ¶¶[0004], [0015], [0019]. Guntert states that its pavers "normally [have] four crawler tracks, but can also have only three, each mounted to a jacking column, supporting and propelling the frame during use of the paver in the paving direction." *Id.*, ¶¶[0002], [0004]. Notably, Guntert only mentions three-track designs in passing—the pavers it depicts in the figures all have four crawler tracks. *E.g.*, *Id.*, Figs. 1, 6-6C.

Patent Owner, Guntert & Zimmerman - Ex. 2002, p. 54

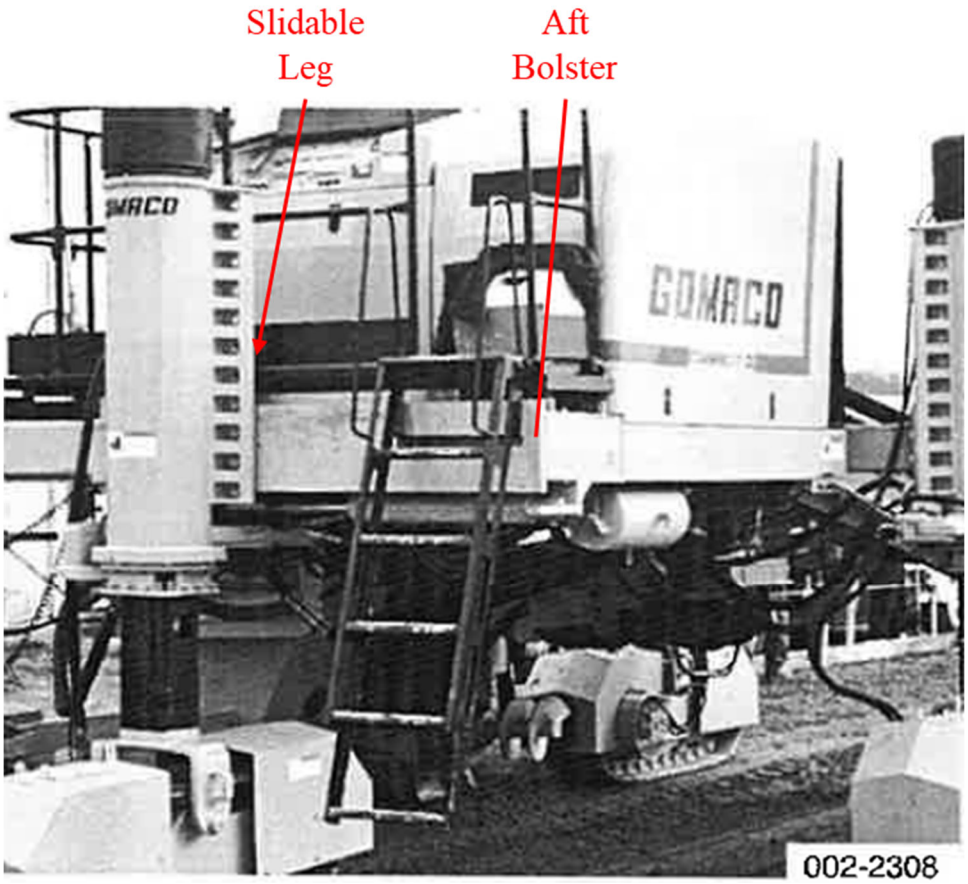
CIII discloses a three-track paver with a swing leg, a telescoping leg, and a slidable leg, each of which having a jacking column and crawler track. *See* Section VII.A.2.a. The swing leg is attached to the front-left portion of a front bolster, the telescoping leg extends and retracts laterally from the right side of the front bolster, and the slidable leg slides left and right on an aft bolster. CIII, 3-14–18.



Id., 3-14 (annotated, top-down view).



Id., 1-13 (annotated).



CIII, 2-32; Singhose, ¶60. CIII discloses ways to position the legs for certain types of paving tasks (e.g., curb and gutter or sidewalk) while maintaining stability. CIII, 3-14, 3-18.

A POSITA would have looked to CIII, including its forward/aft bolster design for a three-track paver, and known to use that design in combination with Guntert, including Guntert's swing leg assemblies and the coordinated control system for the swing leg and crawler tracks. Singhose, ¶61. A POSITA would have recognized that with only three crawler tracks instead of four, the machine may become unstable if the crawler tracks are not positioned to maintain the center of

gravity of the machine within the base of support. Singhose, ¶61; CIII, 3-18. CIII provides implementation details of a three-track slipform paver that a POSITA would have relied upon to ensure that the paver is configured to operate safely and efficiently. Singhose, ¶61.

A POSITA would have recognized that three-track pavers provide advantages for certain paving applications. Singhose, ¶62. For example, CIII discloses three-track configurations for curb and gutter or sidewalk jobs. CIII, 3-14. A POSITA would have recognized that three-track pavers like CIII's are better equipped than larger pavers like Guntert's for paving curbs and gutters requiring a tighter turning radius. U.S. Patent No. 6,890,123 to Piccoli ("Piccoli"; Ex. 1026), 1:25-29 (stating that "bulky machines" are "difficult to maneuver" and "fail to permit the forming of tight radius curbs and gutters"); Singhose, ¶62. A POSITA would have recognized that a paver equipped to form tight radii is advantageous because it "reduces the requirement for hand forming, resulting in higher production, especially in areas of many tight radii such as parking lots." Piccoli, 1:29-35; Singhose, ¶62.

A POSITA would have thus been motivated to combine Guntert and CIII to achieve a three-track slipform paver. Singhose, ¶63. It would have been obvious to use CIII's frame to implement three jacking columns and crawler tracks, as Guntert itself acknowledges that pavers can be configured with three tracks and jacking

columns. Guntert, ¶[0004]; Singhose, ¶63. A POSITA would have known from CIII's disclosures regarding the positions of the crawler tracks to attach swing legs on either or both ends of the front bolster, as suggested in CIII, and one swing leg near the middle of the aft bolster, as suggested in CIII. Singhose, ¶63; CIII, 3-14; *see also* U.S. Patent No. 6,481,924 to Smolders et al. ("Smolders"; Ex. 1010), Fig. 1 (disclosing two swing-leg assemblies coupled to the left and right front ends of the frame of a paver). A POSITA would have known from CIII that such swing leg positions would ensure that the paver could be configured for different paving tasks without risking the stability of the paver, as the placement of the aft crawler track near the middle of the aft bolster would minimize the risk of the machine tipping. Singhose, ¶64. It also would have been obvious to attach the front-right jacking column and crawler track to a laterally telescoping leg, as disclosed in CIII, that extends and retracts from the front bolster. Singhose, ¶64. A POSITA would have recognized swing legs and telescoping legs as advantageous design alternatives, each allowing the lateral positioning of the crawler track to be changed relative to the frame. Singhose, ¶64. A POSITA would have recognized that these lateral adjustments can shift the center of gravity and provide improved stability. CIII, 3-15; Singhose, ¶64. A POSITA would have been motivated to modify Guntert to include a telescoping leg because, by retracting into the forward bolster, the telescoping leg permits a smaller profile when transporting the machine

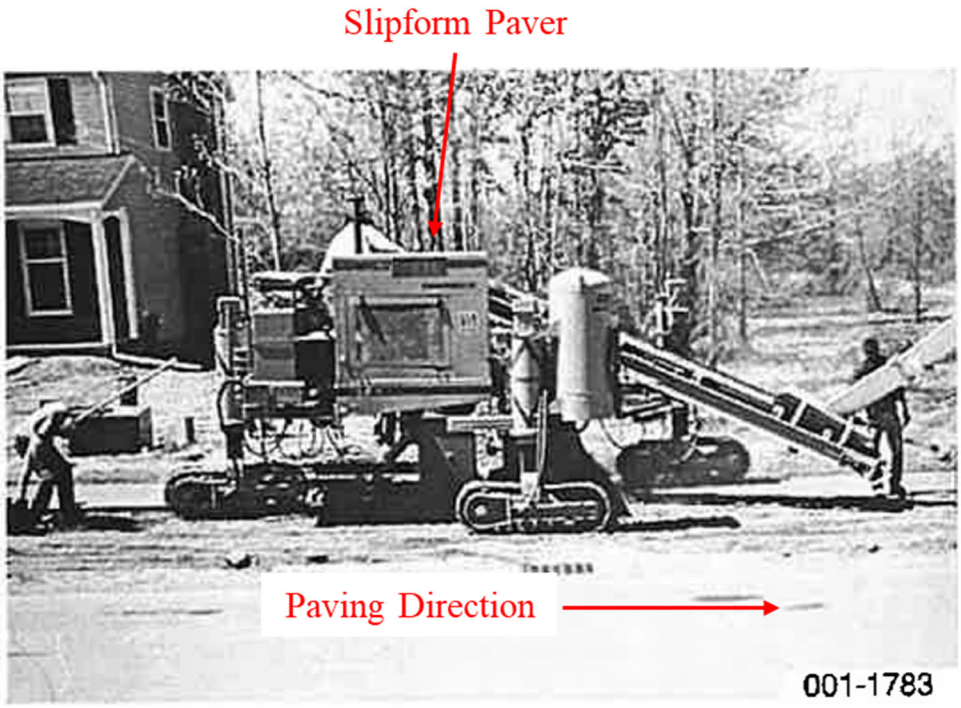
between sites. Singhose, ¶64. A POSITA would have had a reasonable expectation of success in making the modifications described above—they involve combining well-known prior-art elements according to known methods to yield predictable results. Singhose, ¶65.

4. Independent Claim 1

a. [1pre]: "A paving machine configured to move in a paving direction for laying concrete into a molded form, having a generally upwardly exposed concrete surface and terminating in lateral concrete sides, the paving machine comprising:"

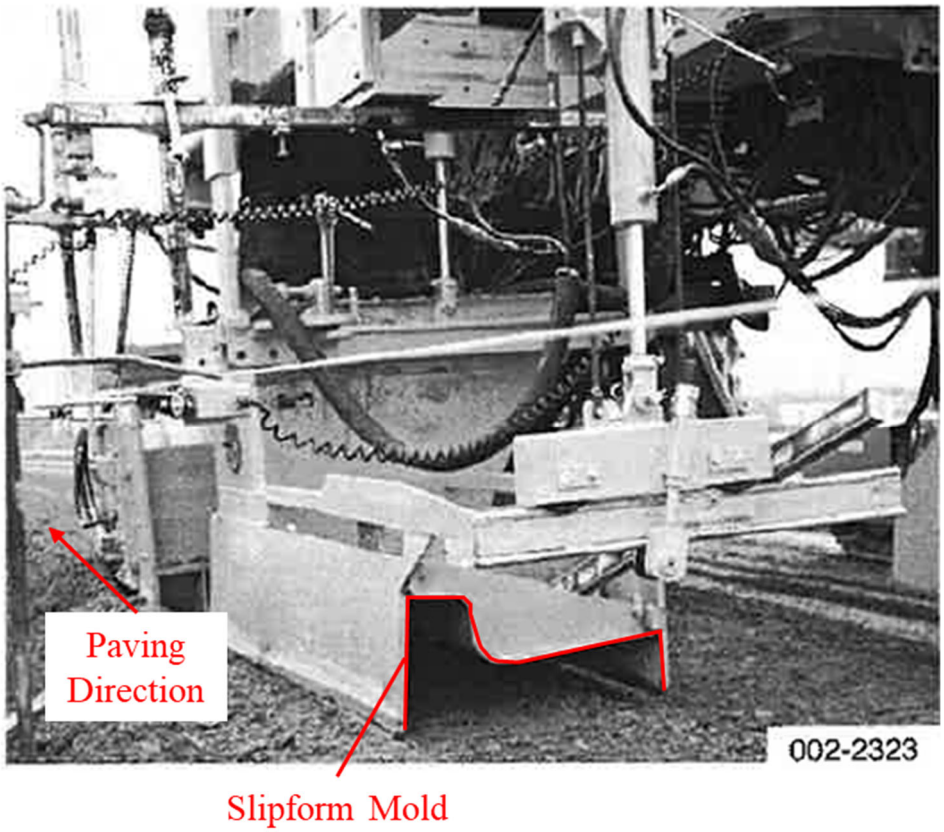
Guntert discloses or, in view of CIII, renders this limitation obvious. Singhose, ¶¶66-69. Guntert discloses a paving machine "configured to move in a paving direction for spreading, leveling and finishing concrete [("laying concrete")] into a form having a generally upwardly exposed, finished concrete surface and terminating in lateral concrete sides." Guntert, Abstract; *see also id.*, ¶¶[0002]-[0003], [0035], Claim 1. Guntert discloses that "sideforms mounted on each side of the slipform paving kit shape and confine the sides of the slab during the slipform paving process." *Id.*, ¶[0003].

Further, CIII discloses a "Slipform Paver," which is depicted in the image below, annotated to indicate its paving direction. CIII, 1-2.

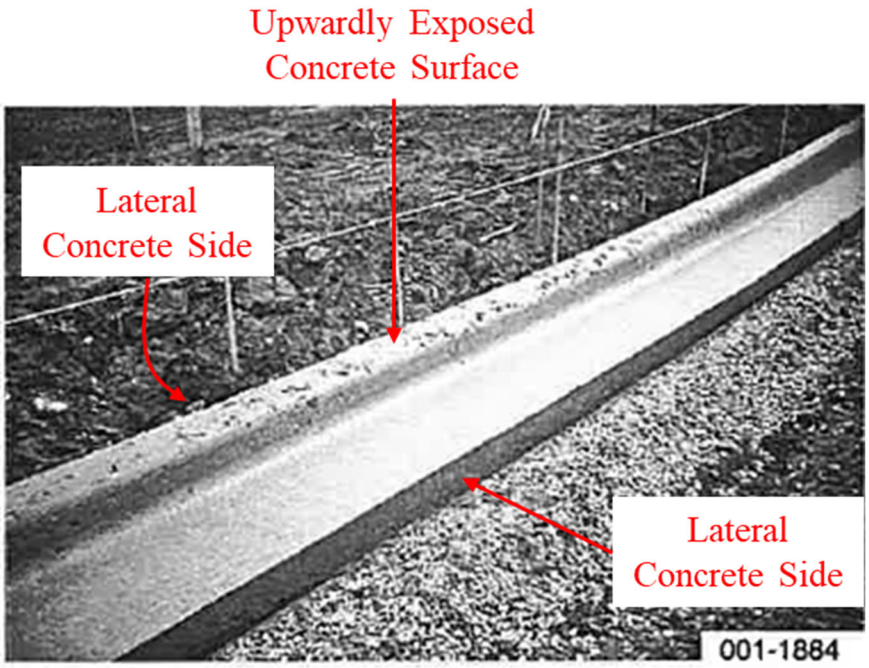


Id., 3-11 (annotated).

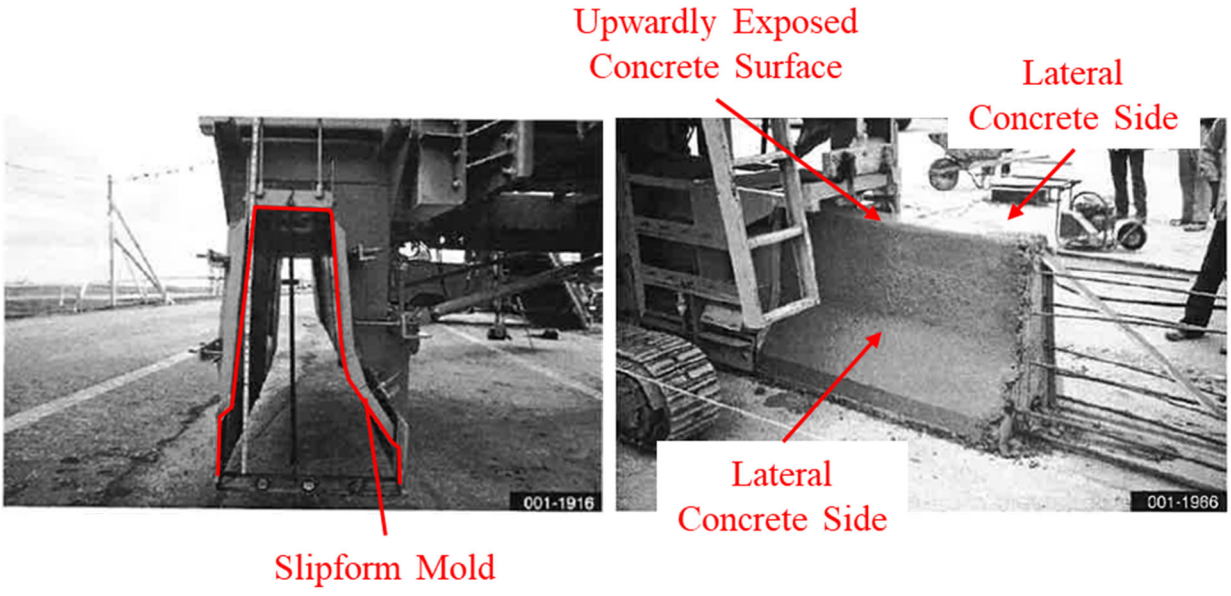
CIII also discloses that the paver includes a "slipform mold" for laying concrete in a molded form. *Id.*, 3-47. One example of a slipform mold in CIII is shown below. Singhose, ¶68.



Id., 3-47 (annotated). CIII directs the operator to start moving the machine forward ("paving direction") when "the form is completely full," allowing concrete "to slip from the rear of the form." *Id.*, 3-51, 4-25; Singhose, ¶68. CIII also illustrates the resulting concrete laid in a molded form, having a generally upwardly exposed concrete surface and terminating in lateral concrete sides, for example, in the image below. Singhose, ¶68.



CIII, 3-53 (annotated). CIII also discloses other slipform molds for laying concrete in different molded forms, as shown below. *Id.*, 4-2, 4-24–27; Singhose, ¶68.

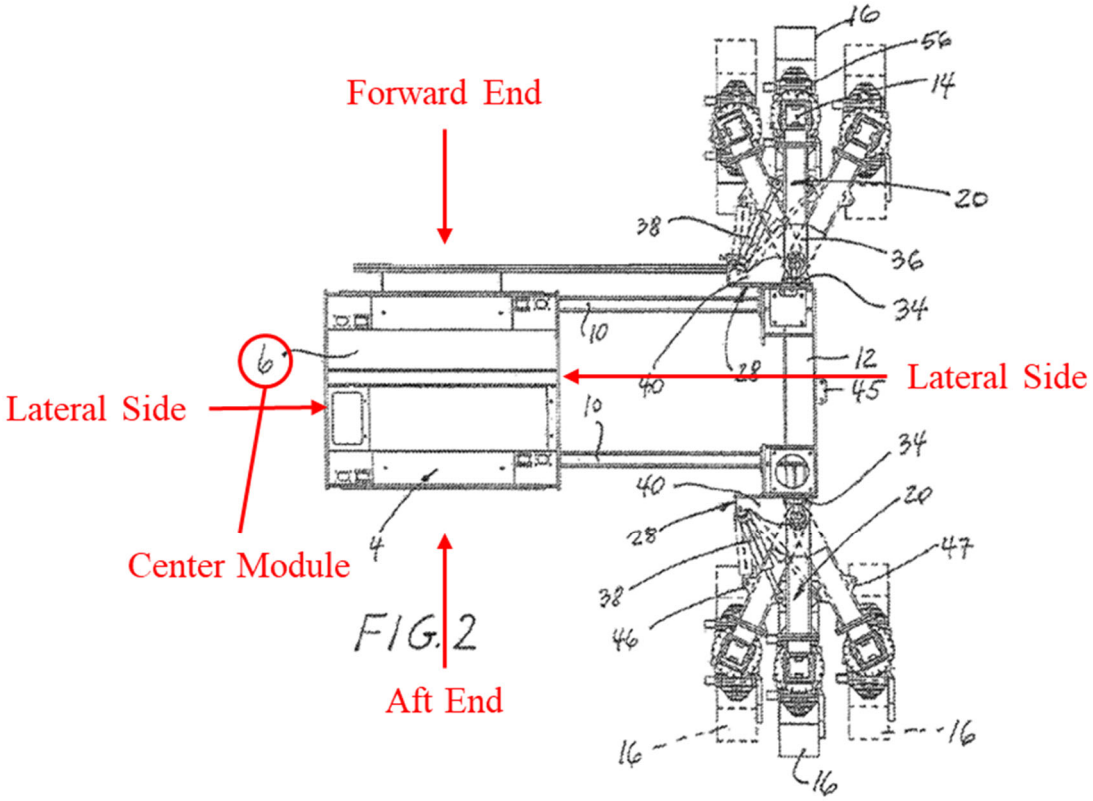


CIII, 4-2 (annotated, left), 4-24 (annotated, right).

As explained in Section VII.A.3, it would have been obvious to combine Guntert and CIII to implement Guntert's teachings on a three-track paver using CIII's frame. Because the paving kit that lays concrete in CIII is attached to CIII's frame, it would have been routine and obvious to implement CIII's paving kit, including its slipform mold for laying concrete into a molded form, having a generally upwardly exposed concrete surface and terminating in lateral concrete sides. Singhose, ¶69; *see infra* Section VII.A.16.

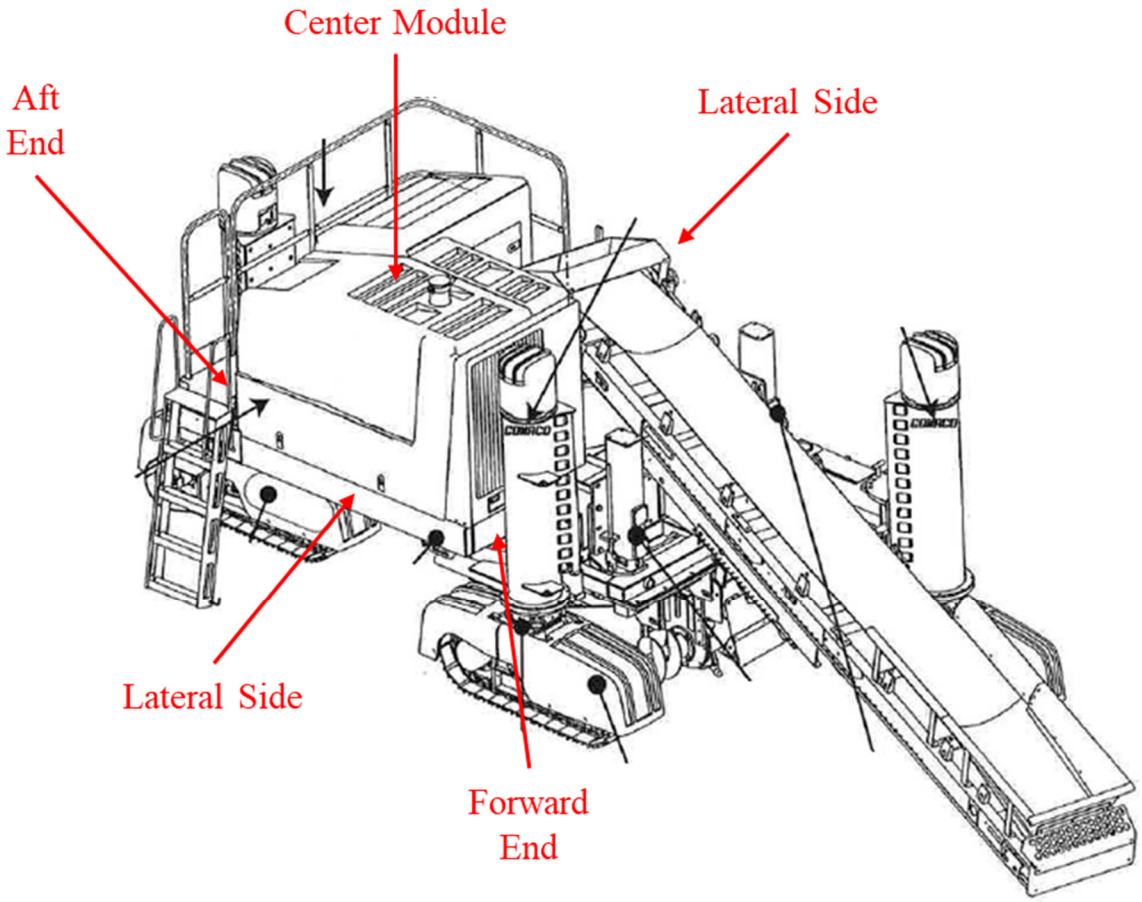
b. [1a]: "a center module having a forward end, an aft end, and lateral sides;"

Guntert discloses these features. Singhose, ¶70. Guntert discloses "a main frame including a center module having a forward end, an aft end and lateral sides therebetween." Guntert, Claim 5.

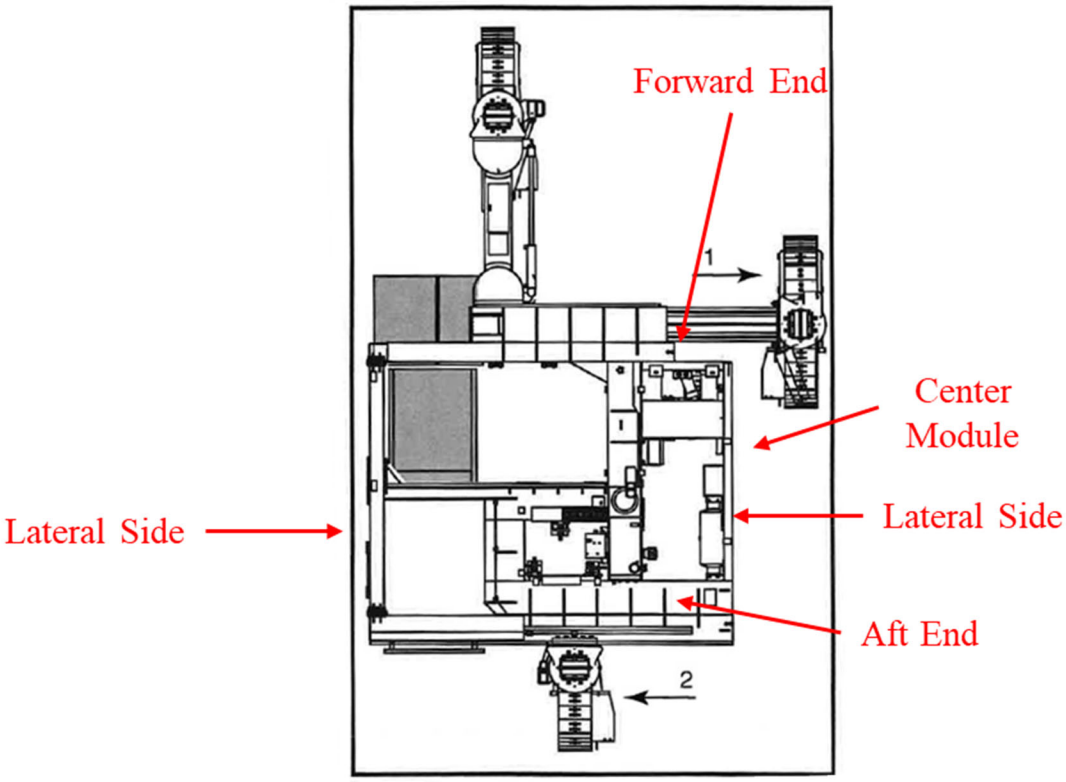


Guntert, Fig. 2 (annotated).

CIII also discloses these features. As depicted in the images below, CIII's paver frame includes a center module having forward and aft ends and two lateral sides. CIII, 1-13, 2-32, 3-14; Singhose, ¶71.



CIII, 1-13 (annotated).

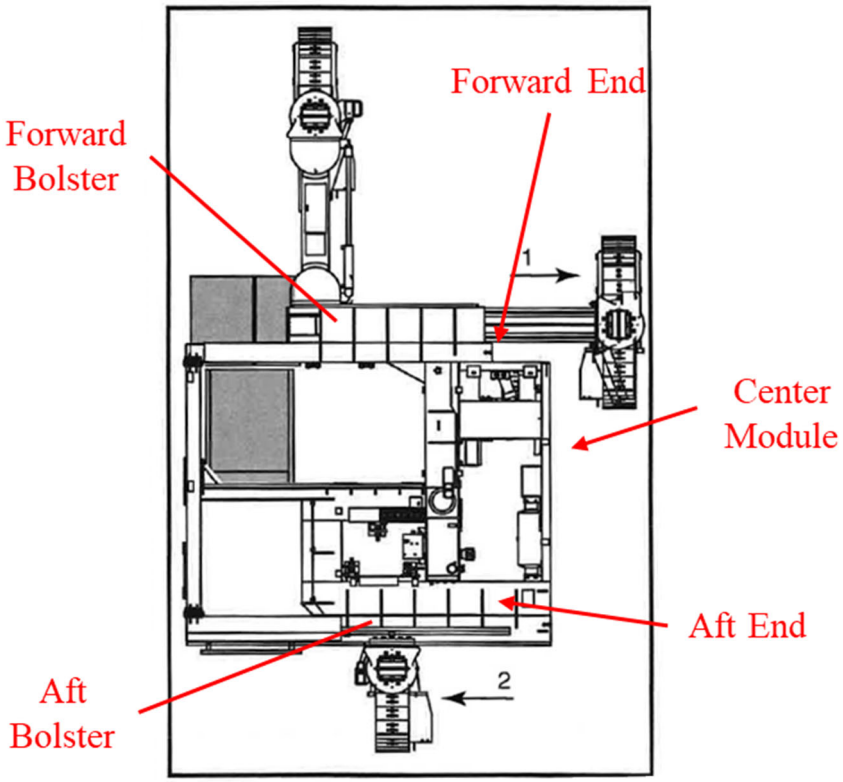


Id., 3-14 (annotated).

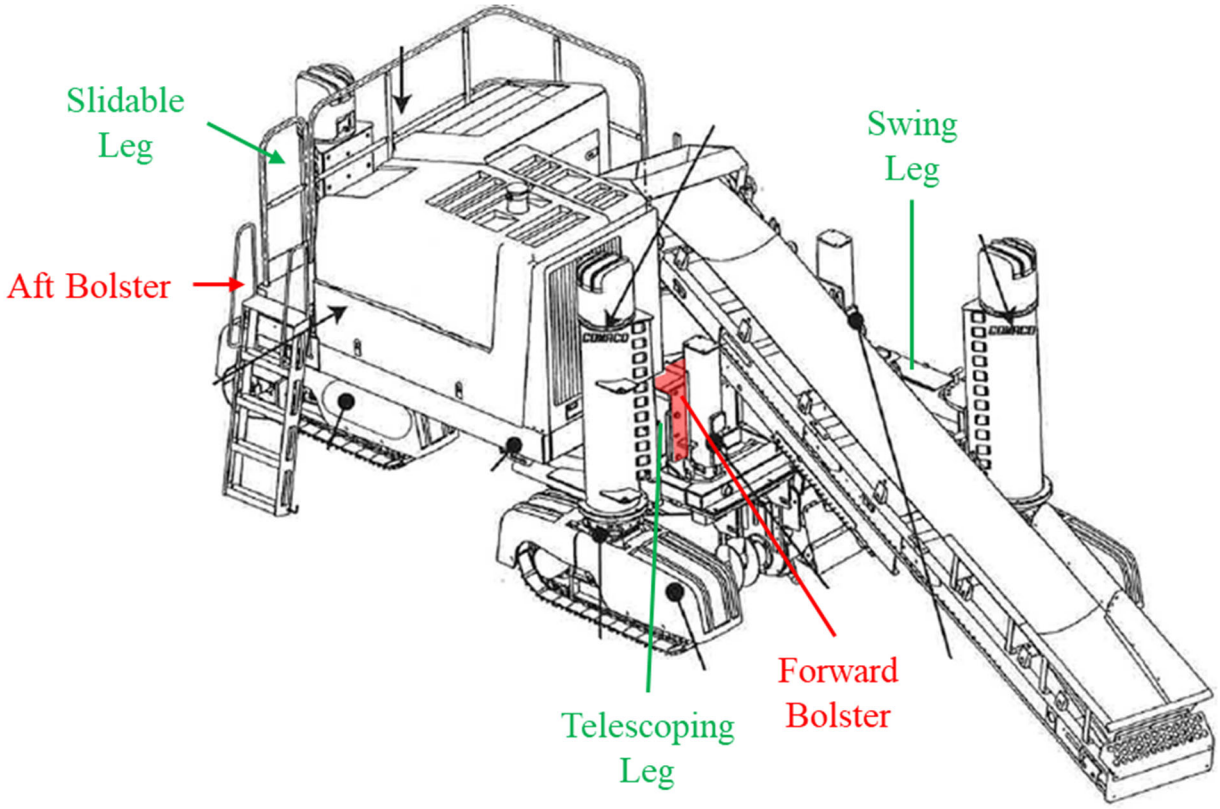
For the reasons discussed in Section VII.A.3, it would have been obvious to combine Guntert and CIII to achieve a three-track slipform paver with a center module having a forward end, an aft end, and lateral sides. Singhose, ¶72.

c. [1b]: "a forward bolster connected to the forward end of the center module; an aft bolster connected to the aft end of the center module;"

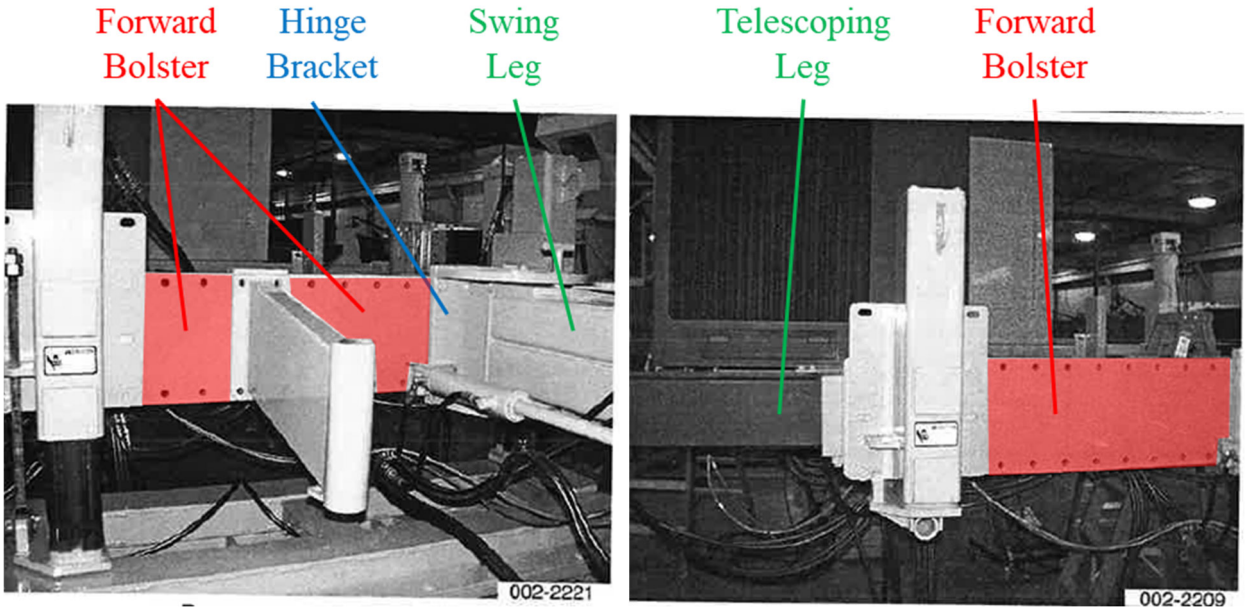
CIII discloses a forward bolster connected to the forward end of the center module and an aft bolster connected to the aft end of the center module, as shown in the images below. CIII, 1-13, 2-32, 3-14; Singhose, ¶73.



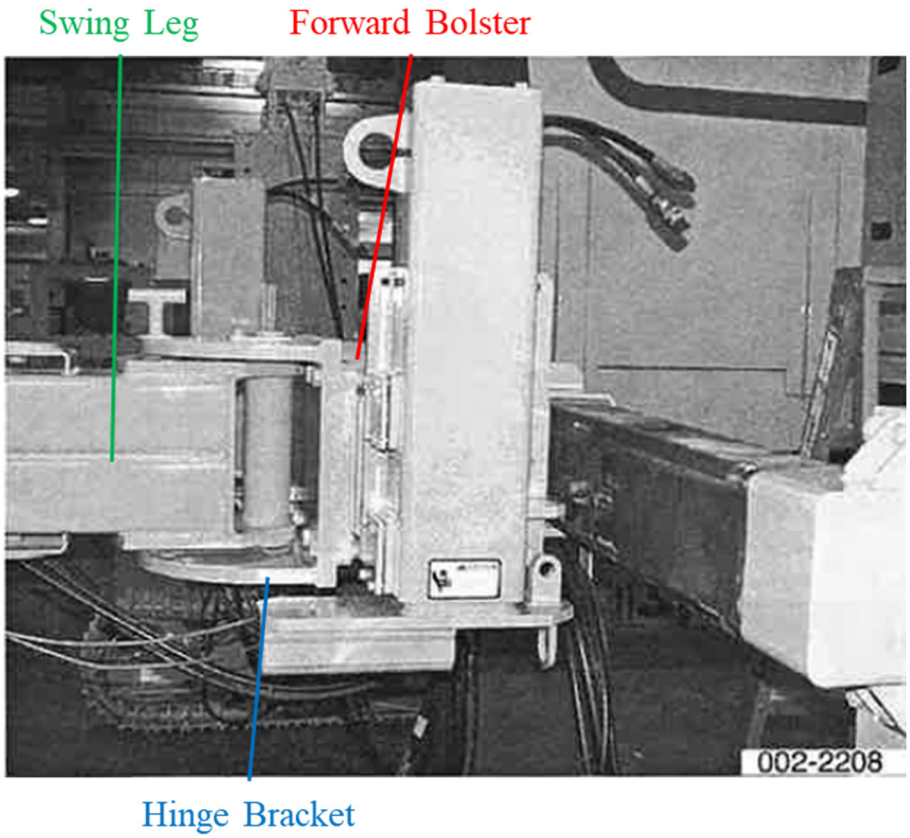
CIII, 3-14 (annotated).



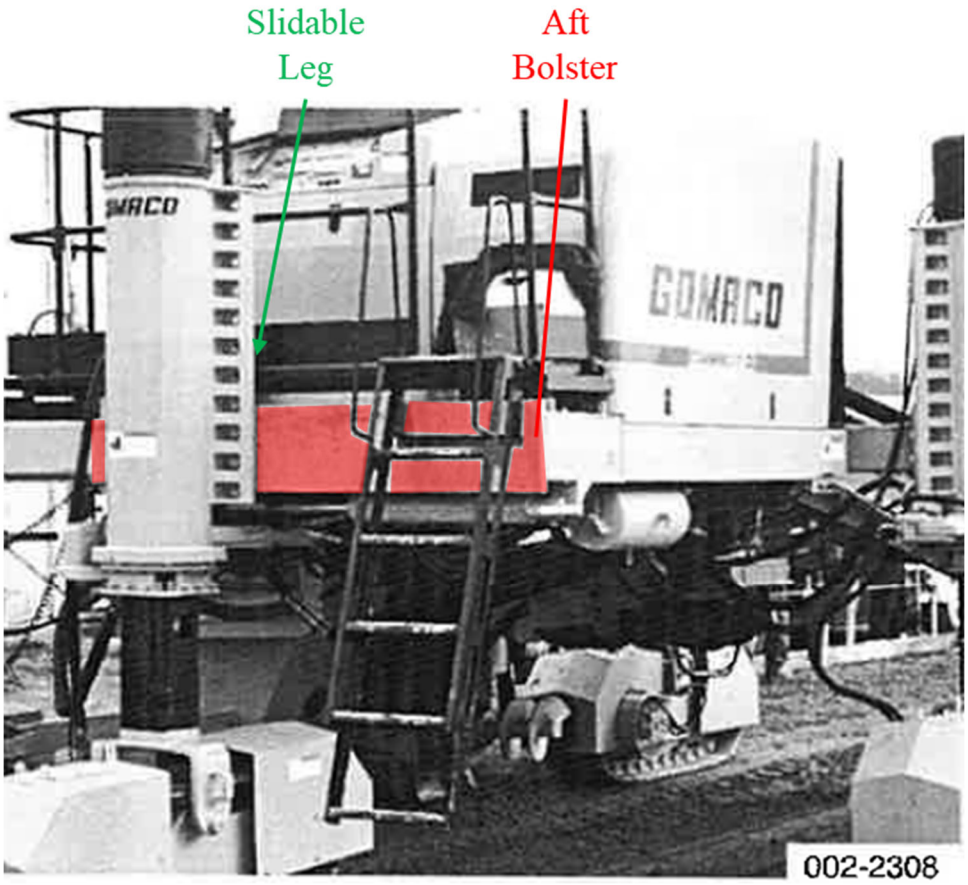
Id., 1-13 (annotated).



Id., 6-2 (annotated).

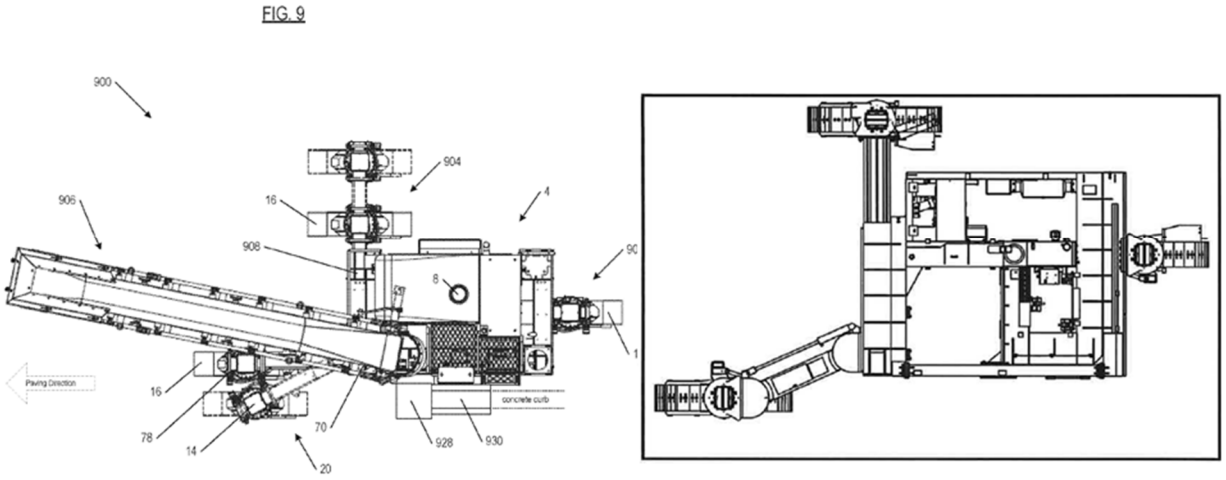


Id., 3-23 (annotated).



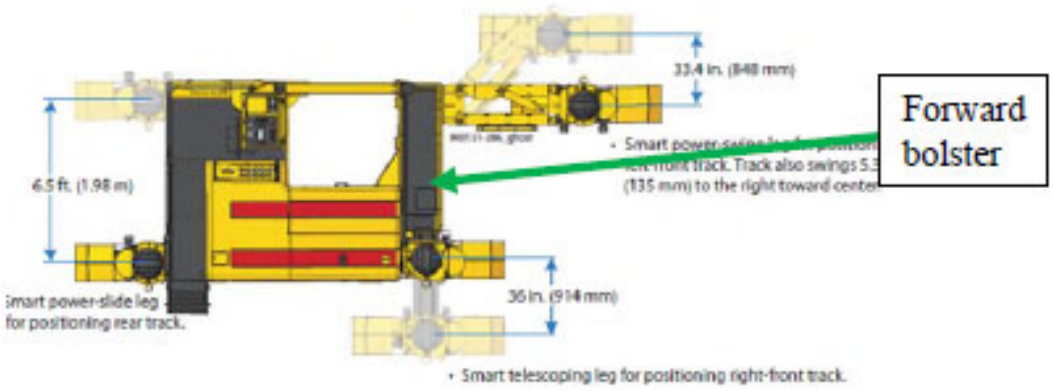
Id., 2-32.

Notably, the ’571 patent does not use the terms “forward bolster” or “aft bolster” anywhere outside of the claims. The only support for these features comes from added Figures 9-13E. The paver frame depicted in these figures closely resembles the one depicted in CIII, as shown below, further supporting the fact that CIII discloses forward and aft bolsters. Singhose, ¶74.

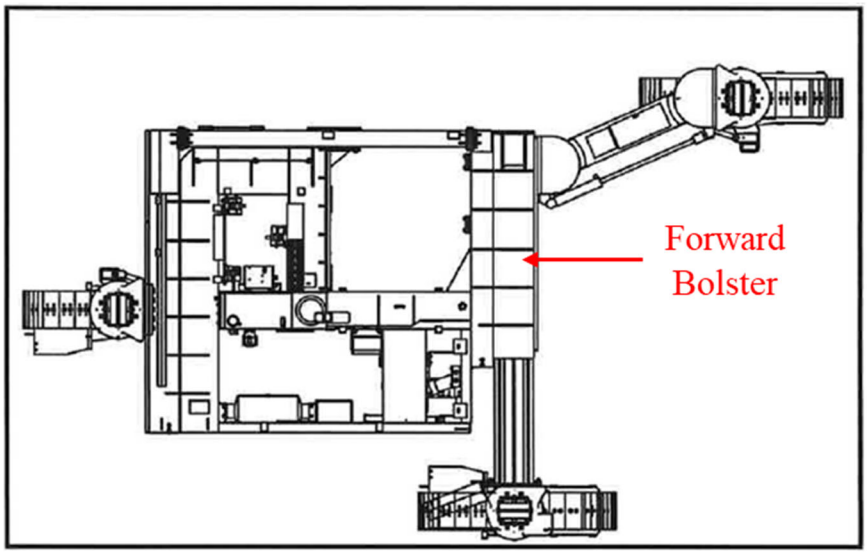


Ex. 1001, Fig. 9 (left); CIII, 6-3 (right).

In district court, G&Z has accused features on GOMACO's current day Commander III machine of infringing, and, in doing so, accused bolster features in the Commander III machine that are *the same as* the bolster features disclosed in CIII of satisfying limitation [1b]. Ex. 1016, 2-3; Singhose, ¶¶75-76. Indeed, the annotated images in G&Z's infringement contentions point to bolster features that are virtually identical to the bolster features that GOMACO identifies in CIII as the claimed forward and aft bolsters.

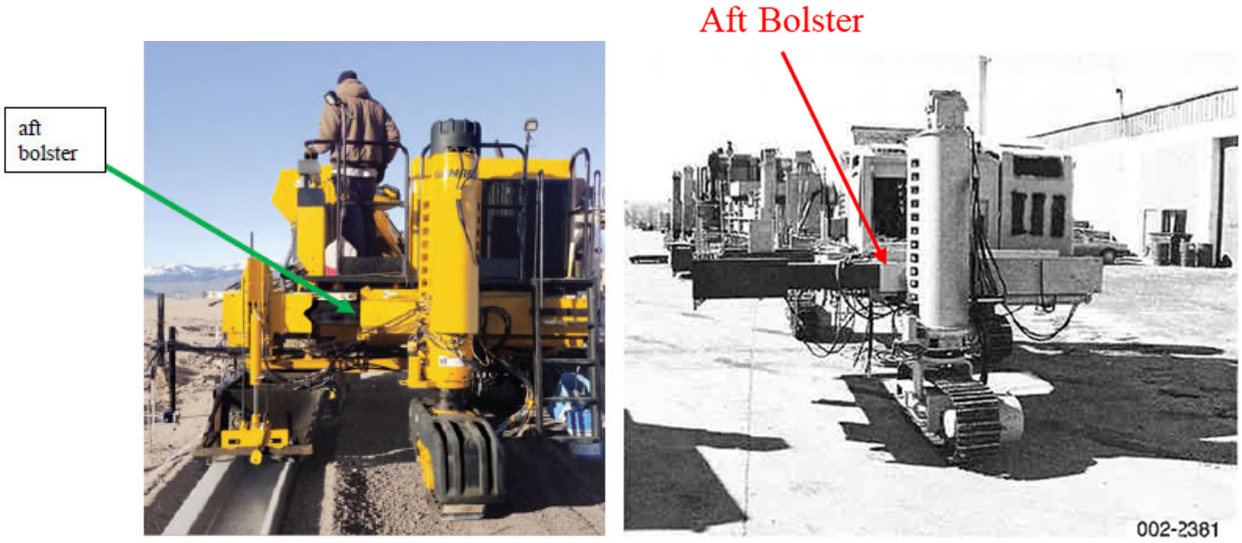


G&Z Infringement Contentions



Prior Art CIII Manual

Ex. 1016, 2 (top); CIII, 6-3 (annotated, bottom).



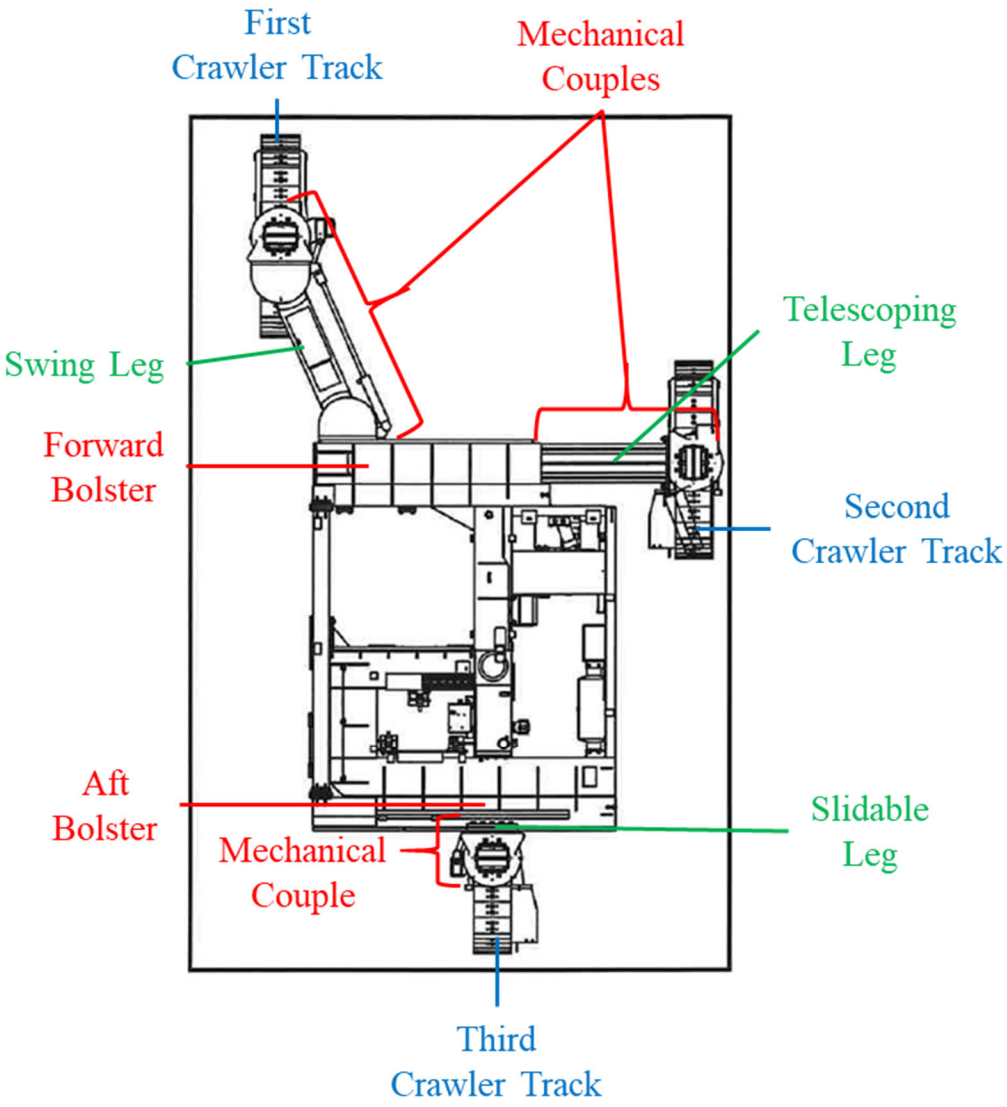
G&Z Infringement Contentions Prior Art CIII Manual

Ex. 1016, 3 (left); CIII, 3-16 (annotated, right).

For these reasons and those described in Section VII.A.3, limitation [1b] is obvious because CIII discloses the claimed bolster design, and a POSITA would have known to use that bolster design (i.e., forward and aft bolsters connected to the forward and aft ends of the center module, respectively) in combination with Guntert's teachings. Singhose, ¶77.

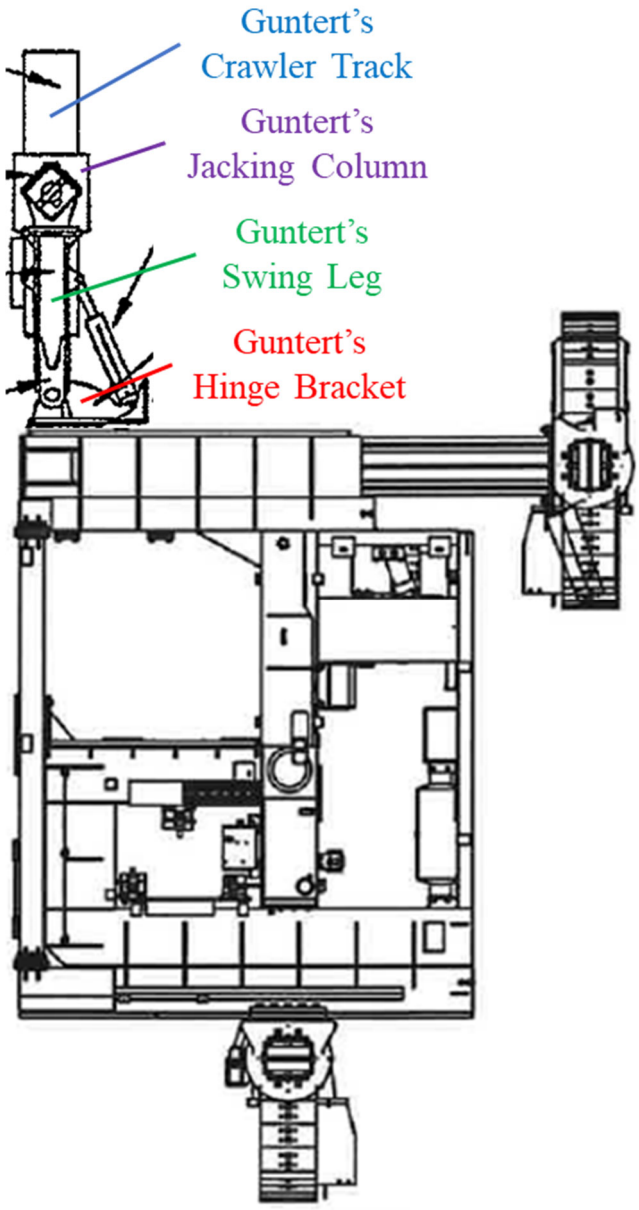
d. [1c]: "a first crawler track and a second crawler track mechanically coupled to the forward bolster and a third crawler track mechanically coupled to the aft bolster;"

As shown below, CIII discloses two crawler tracks mechanically coupled to a forward bolster and one crawler track mechanically coupled to an aft bolster. *See* Sections VII.A.2.a, VII.A.3, VII.A.4.c; Singhose, ¶78.



CIII, 6-3 (annotated). The first crawler track is attached to a swing leg that is coupled to a front surface of the forward bolster with a hinge bracket. *Id.*, 6-3, 6-6, 3-17–18. The second crawler track is attached to a telescoping leg that extends and retracts from the forward bolster. *Id.*, 6-3, 3-14–15. The third crawler track is attached to a slidable leg that is coupled to the aft bolster. *Id.*, 6-3, 6-7, 3-15–16. Thus, CIII alone discloses limitation [1c]. Singhose, ¶78. Additionally, a POSITA

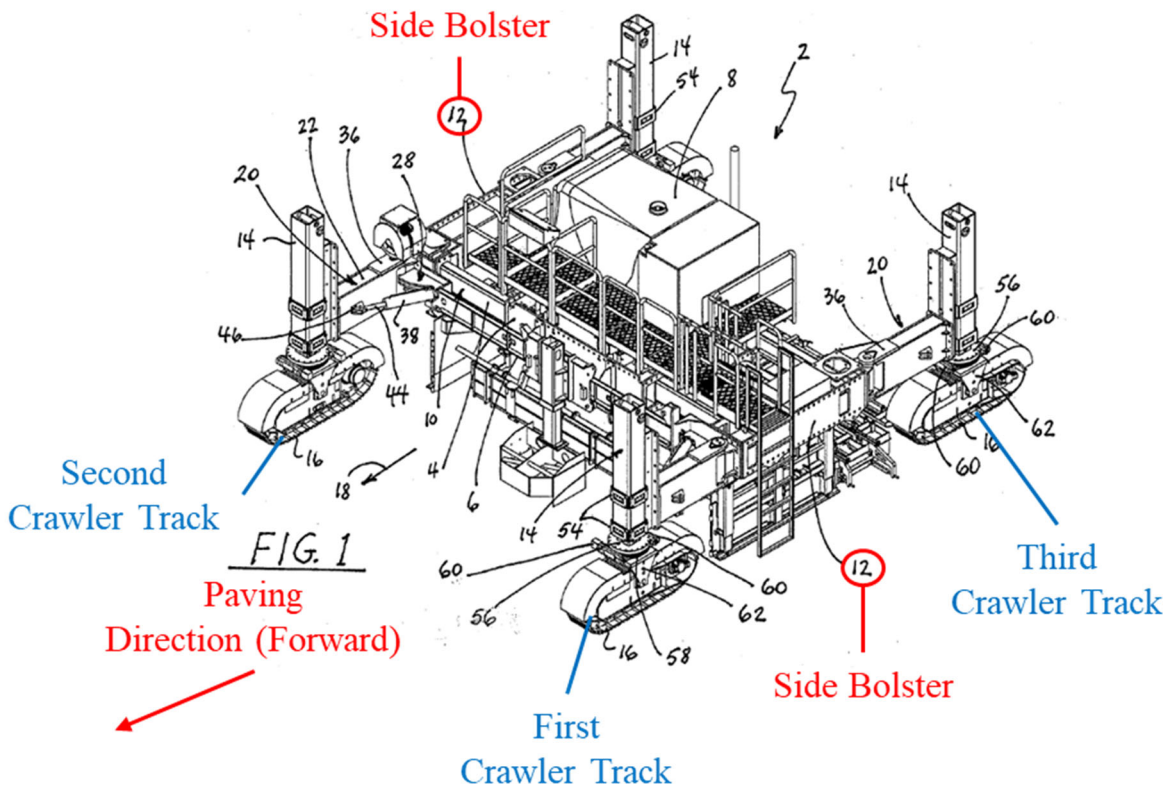
would have known—and it would have been obvious—to replace CIII's front-left swing-leg assembly with a Guntert swing-leg assembly. *Id.*, ¶78.



Singhose, ¶78 (combining aspects of CIII, 6-3, and Guntert, Fig. 6). This modification is a matter of simple design choice and would allow for the same type

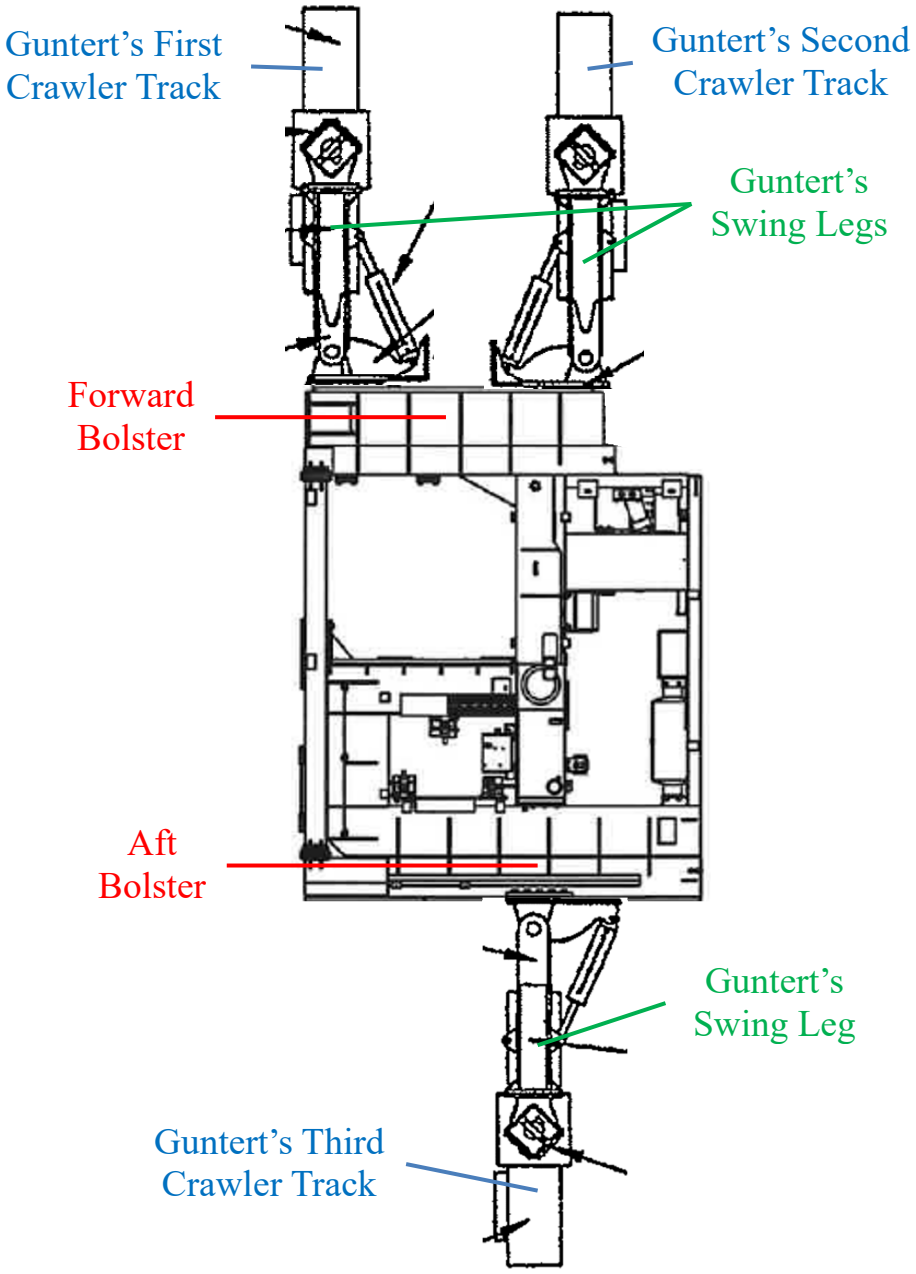
of swing-leg functionality as CIII's front left swing leg. Singhose, ¶78; *see* Section VII.A.3.

Alternatively, and as discussed in Sections VII.A.3 and VII.A.4.c, a POSITA would have known to use CIII's frame and bolster design in combination with Guntert to have a three-track paver with multiple swing legs. Singhose, ¶79. In particular, Guntert discloses four crawler tracks, each of which are mechanically coupled to side bolsters with a jacking column, swing leg, and hinge bracket. Guntert, ¶¶[0015], [0033], [0036]. Three of the crawler tracks are identified below.



Id., Fig. 1 (annotated).

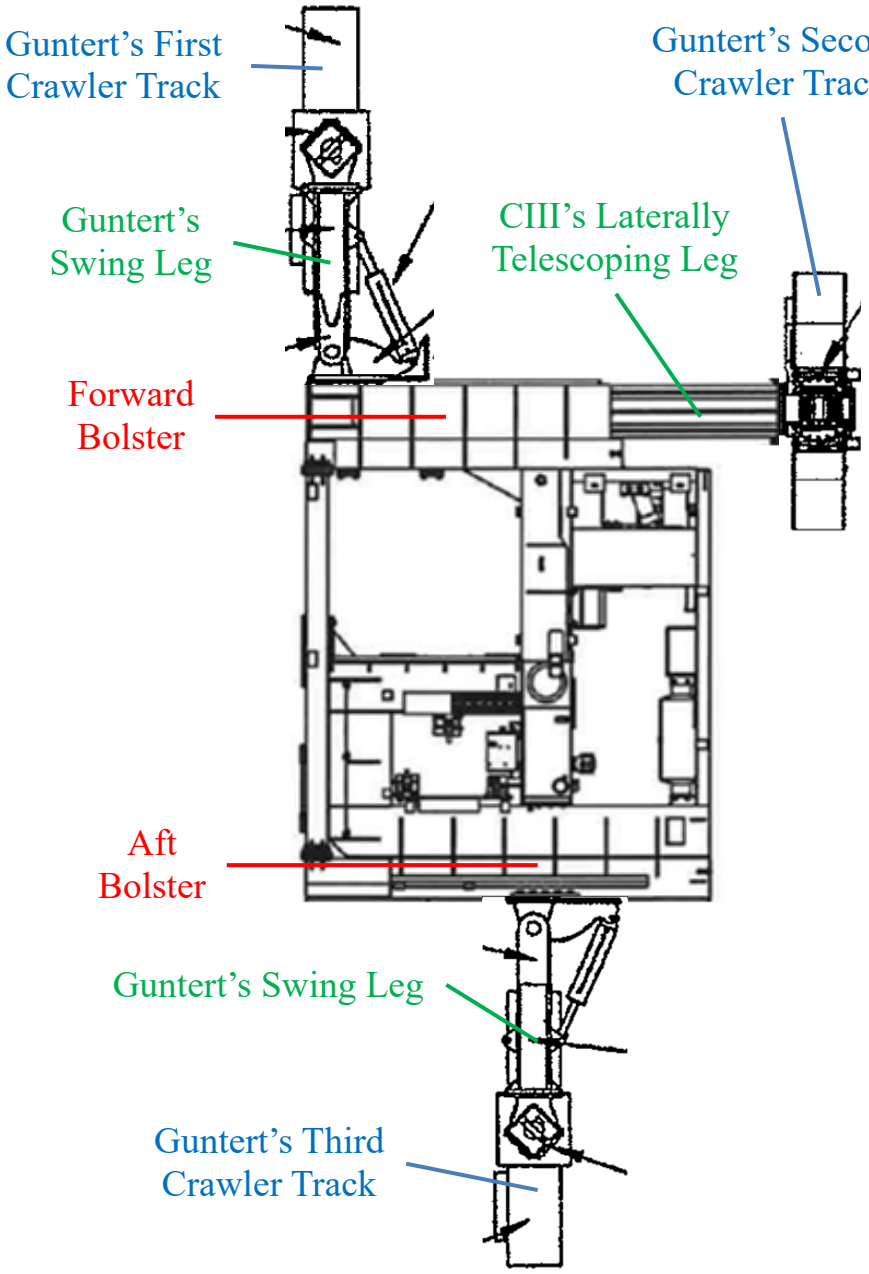
Two possible configurations using Guntert's leg assemblies in combination with CIII's bolster design render limitation [1c] obvious. Singhose, ¶80. First, it would have been obvious to mechanically couple Guntert's first and second crawler tracks, as identified above, to a forward bolster and to mechanically couple Guntert's third crawler track, as identified above, to an aft bolster using swing legs. *See* Section VII.A.3; Singhose, ¶80. Guntert discloses that each swing leg is "pivotally mounted on a hinge bracket that is secured to the front (or aft) ends of the side bolsters" with bolt and nut fasteners. Guntert, ¶¶[0015], [0037]. A POSITA would have understood that these hinge brackets would have made it routine to couple the crawler tracks to the associated bolster. Singhose, ¶80. Moreover, Guntert discloses that some pavers can "have only three [crawler tracks]." Guntert, ¶[0004]. Based on CIII's track locations and its disclosures on bolsters and positioning its legs for maximum stability and to avoid tipping, CIII, 3-13–18, and Guntert's acknowledgement that three tracks can be used, it would have been obvious to couple Guntert's crawler tracks, jacking columns, and swing legs to the associated bolster, for example, in the following locations:



Singhose, ¶80 (combining aspects of CIII, 6-3, and Guntert, Fig. 6).

Second, it would have been obvious to use CIII's laterally telescoping leg instead of Guntert's swing leg to mechanically couple Guntert's second crawler track to the front bolster. Singhose, ¶81; *see* Section VII.A.3. Based on CIII's track

locations and its disclosures about positioning its legs for maximum stability and to avoid tipping, CIII, 3-13–18, it would have been obvious to couple Guntert's crawler tracks to the associated bolster, for example, in the following locations:



Singhose, ¶81 (combining aspects of CIII, 6-3, and Guntert Figs. 6 & 8B).

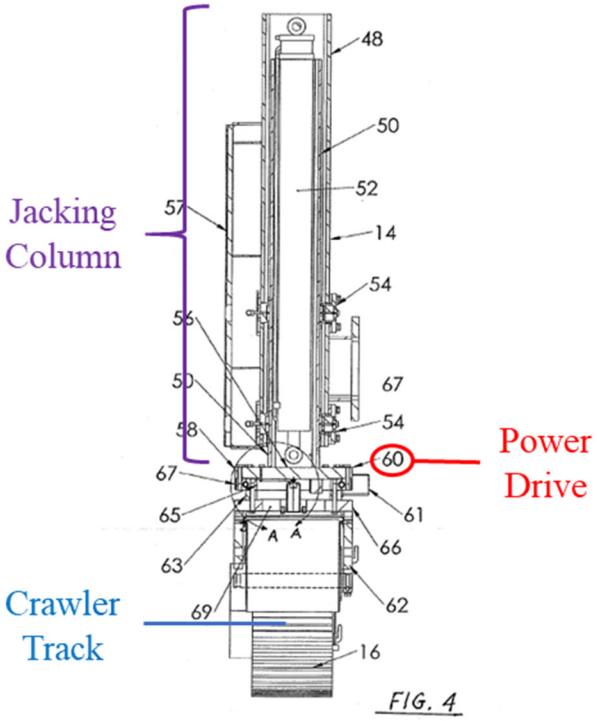
These configurations would have been obvious alternative design choices based on the disclosures of Guntert and CIII and each of them renders obvious element [1c]. Singhose, ¶82.

e. [1d]: "the forward bolster having a first swing leg, an upright first jacking column secured to the first swing leg, and a rotary connection between the first jacking column and the first crawler track permitting relative rotational movements of the first crawler track and the first jacking column about an upright axis; and"

[1e]: "a first power drive between the first jacking column and the first crawler track of the first swing leg, configured for translating relative rotational movements between the first jacking column and the first crawler track."

Guntert discloses that each crawler 16 ("first crawler track") and the associated jacking column 14 ("upright first jacking column") are mounted to a bolster swing leg 20 ("upright first jacking column secured to the first swing leg"). Guntert, ¶[0036], Fig. 1; Singhose, ¶83; *see* Section VII.A.1. As discussed in the various design alternatives described in Section VII.A.4.d, it would have been obvious to couple Guntert's first crawler track to the forward bolster with Guntert's swing leg, jacking column, and hinge bracket ("the forward bolster having a first swing leg" and "an upright first jacking column"). Singhose, ¶83; *see* Section VII.A.3.

Guntert's jacking columns are "hydraulically powered for raising and lowering of the paving machine relative to the crawlers on the ground" and are mounted to the free end 19 of a swing leg 20. Guntert, ¶¶[0033], [0036]. "The crawlers are mounted to the lower ends of the jacking columns, and they are rotatable relative to the jacking columns about vertical axes" (the forward bolster having "a rotary connection between the first jacking column and the first crawler track permitting relative rotational movements of the first crawler track and the first jacking column about an upright axis"). Guntert, ¶[0033]; Singhose, ¶84. A "rotary actuator (slew gear)" is employed "as the power drive between the crawler track and the jacking column" to rotate the crawlers "about the vertical jacking column axis" ("first power drive between the first jacking column and the first crawler track of the first swing leg, configured for translating relative rotational movements between the first jacking column and the first crawler track"). *Id.*, ¶¶[0019], [0045], [0052], [0057]; Singhose, ¶84.



Guntert, Fig. 4 (annotated).[10]

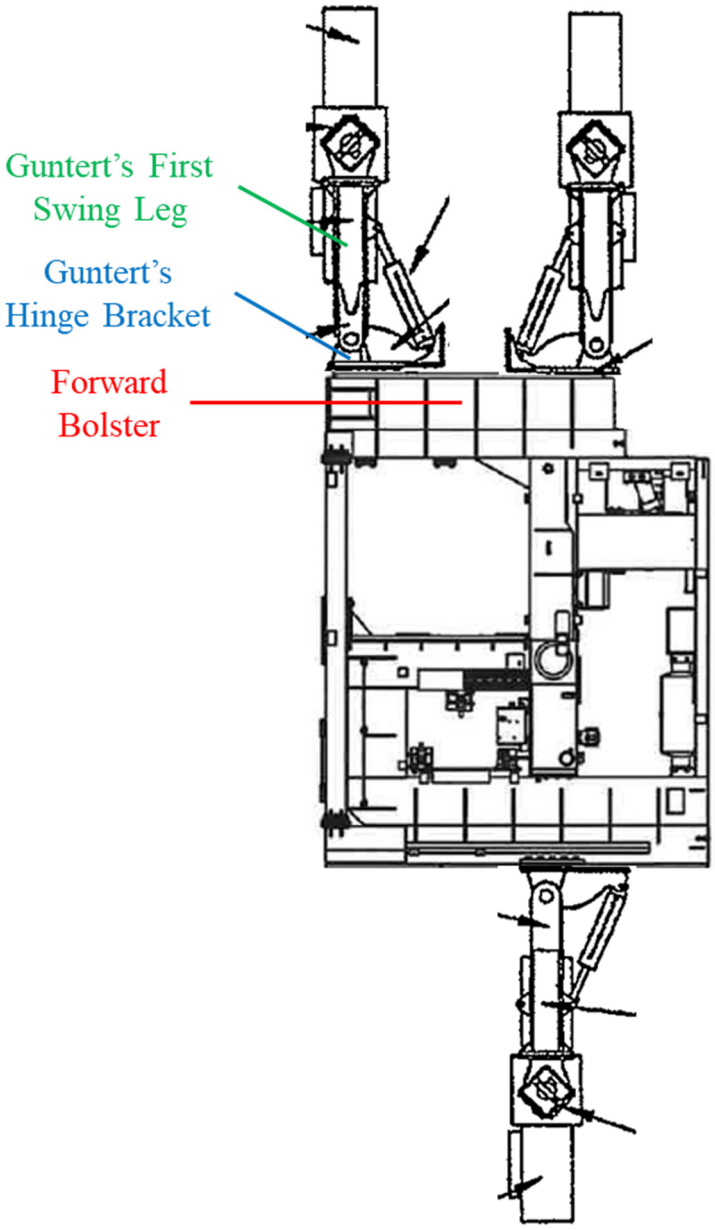
[10] While the parties dispute the construction of "swing leg" in district court, that dispute is not material here. Ex. 1021, 5. GOMACO argues that the swing leg must be "pivotal," *id.*, while G&Z argues that the swing leg must "swing," Ex. 1034, 7. All swing legs disclosed in Guntert and CIII are both pivotal and swing and thus constitute "swing legs" under both parties' constructions. Singhose, ¶85.

5. Claim 2

a. [2a]: A paving machine according to claim 1 further comprising: a hinge bracket interposed between the first swing leg and an associated surface of the forward bolster;

Guntert discloses that "[a] hinge bracket is interposed between each swing leg and an associated surface of the bolsters," i.e., Guntert's side bolsters.[11] Guntert, ¶[0020]. As discussed in Sections VII.A.3 and VII.A.4.d, it would have been obvious to mount the hinge bracket between the first swing leg and the forward bolster ("a hinge bracket interposed between the first swing leg and an associated surface of the forward bolster") because the teachings of Guntert make clear that its swing legs should be mounted using its hinge brackets. Singhose, ¶86. Additionally, mounting the hinge bracket to the front face of the front bolsters is mechanically equivalent to mounting it to the end of the side bolsters of Guntert. Singhose, ¶86.

[11] The unpatentability arguments presented in this Petition for any base claim from which a claim depends apply equally to the dependent claim.



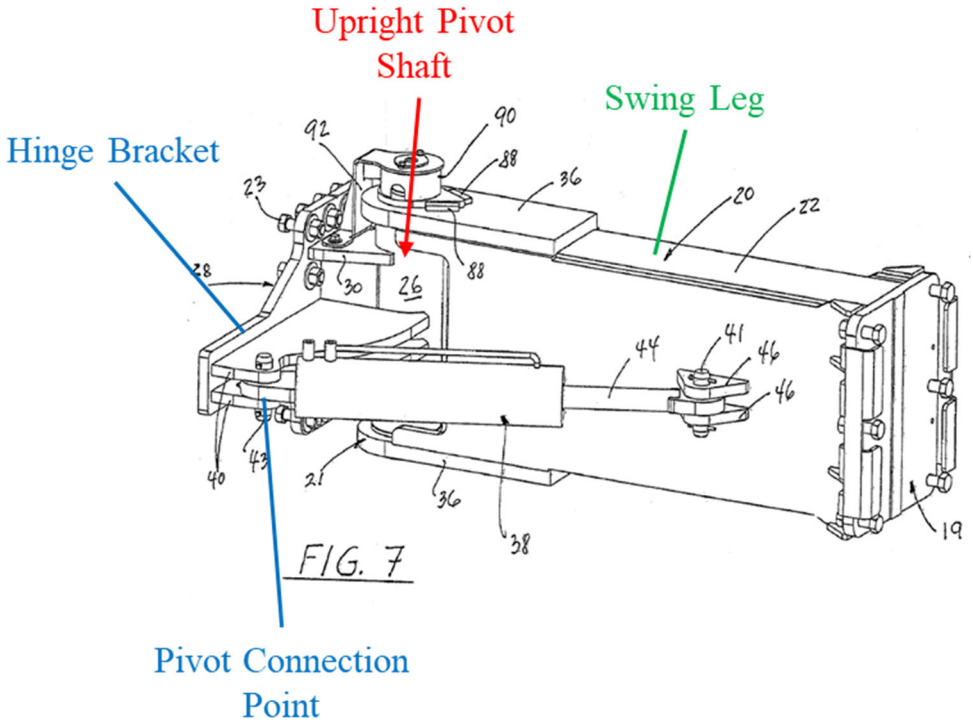
Singhose, ¶86 (combining aspects of CIII, 6-3, and Guntert, Fig. 6).

As mentioned, the parties dispute the construction of "hinge bracket" in district court. Ex. 1021, 5-6. GOMACO's construction requires each "hinge bracket[]" to be "fastenable to a surface," *id.*, while G&Z more broadly accuses welded hinge-bracket designs of infringing, in addition to fastenable ones,

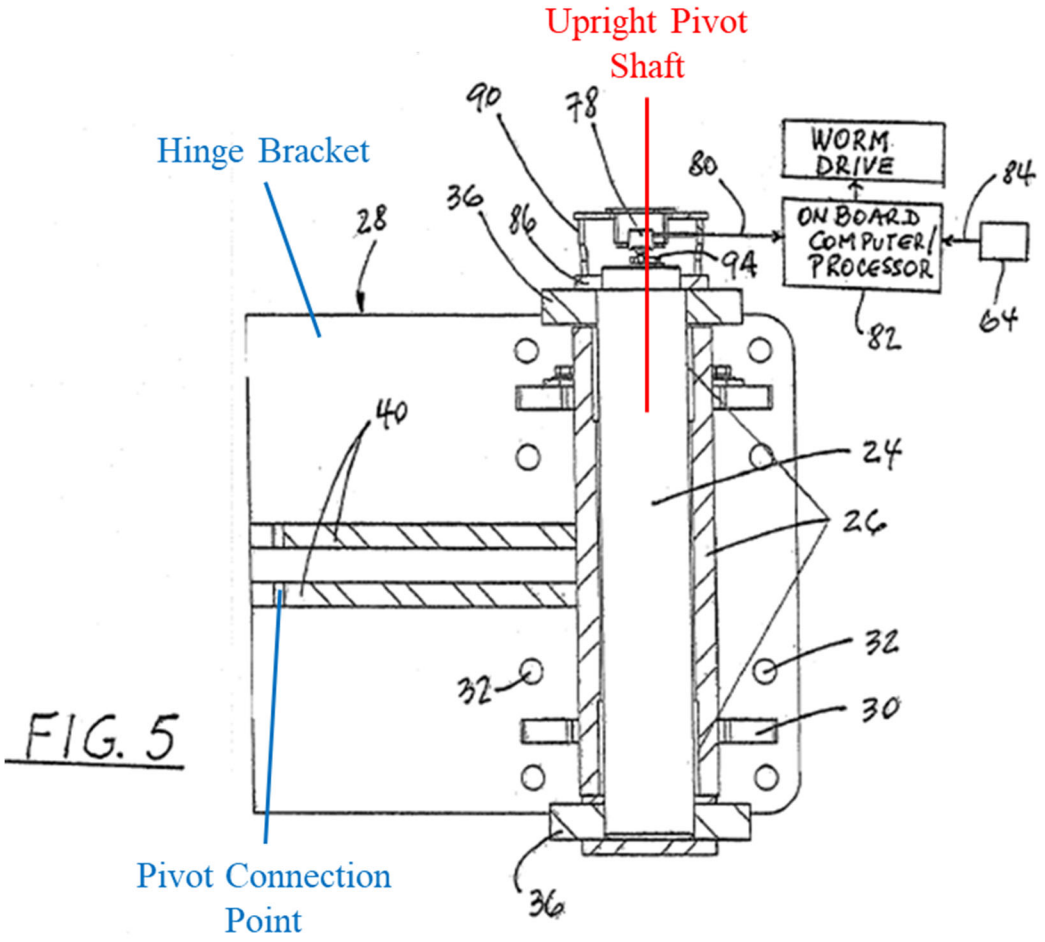
Ex. 1017, 9. Guntert invalidates limitation [2a] under either construction because it discloses fastenable hinge brackets. Singhose, ¶87. For example, Guntert states that each hinge bracket contains "fastening holes 32 for securing it to respective end surfaces 34 of side bolsters 12 with conventional bolt and nut fasteners 23." Guntert, ¶[0037].

b. [2b]: "an upright pivot shaft that engages the first swing leg that permits pivotal movements of the first swing leg relative to the hinge bracket about an upright axis in a substantially horizontal plane, the hinge bracket including a pivot connection point that is laterally spaced from the pivot shaft"

Guntert discloses that its hinge bracket "includes a fixed, upright pivot shaft that pivotally engages the swing leg for pivotal movements in a substantially horizontal plane" relative to the hinge bracket ("an upright pivot shaft that engages the first swing leg that permits pivotal movements of the first swing leg relative to the hinge bracket about an upright axis in a substantially horizontal plane") and a hinge plate with "a pivot pin that is laterally spaced from and fixed in relation to the pivot shaft" ("the hinge bracket including a pivot connection point that is laterally spaced from the pivot shaft"). Guntert, ¶¶[0020], [0039], [0050], Abstract; Singhose, ¶88.



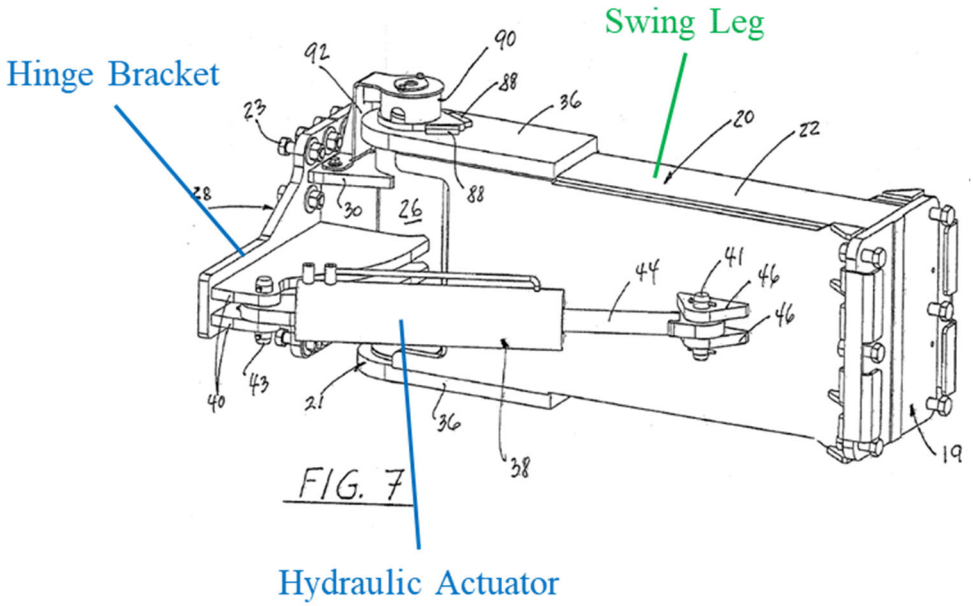
Guntert, Fig. 7 (annotated). As shown above in Figure 7, the pivot connection point is laterally spaced from the upright pivot shaft. Singhose, ¶88.



Id., Fig. 5 (annotated).

c. [2c]: "a hydraulic actuator mounted on the hinge bracket, arranged to control the pivoting of the first swing leg relative to the center module"

Guntert discloses that a hydraulic actuator 38 is "pivotally pinned" to the hinge bracket and "can be energized to pivot bolster swing leg 20 in a horizontal plane" ("a hydraulic actuator mounted on the hinge bracket, arranged to control the pivoting of the first swing leg relative to the center module"). Guntert, ¶¶ [0039]-[0040]; Singhose, ¶89.

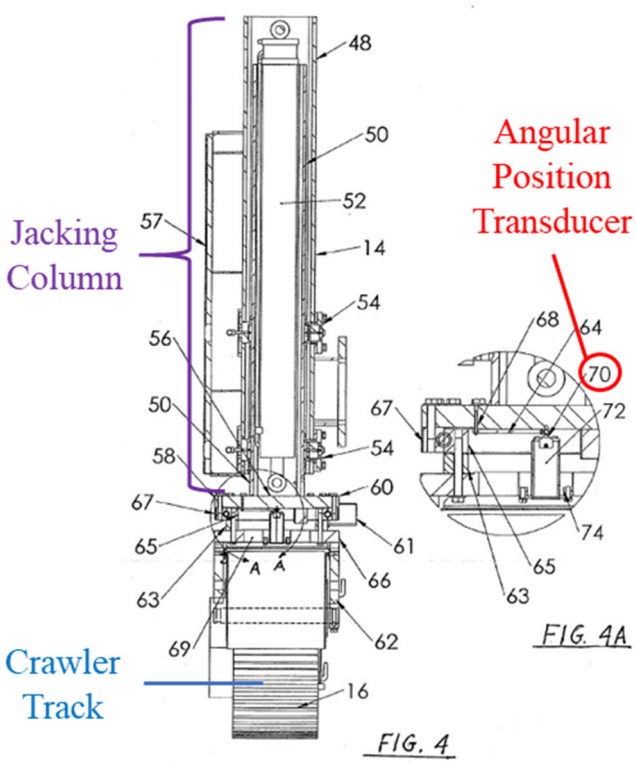


Guntert, Fig. 7 (annotated).

6. Claim 3

a. [3a] "A paving machine according to claim 2 further comprising: a first angular position transducer between the first jacking column and first crawler track, emitting a first position signal which is indicative of an angular orientation of the first crawler track relative to the first jacking column;"

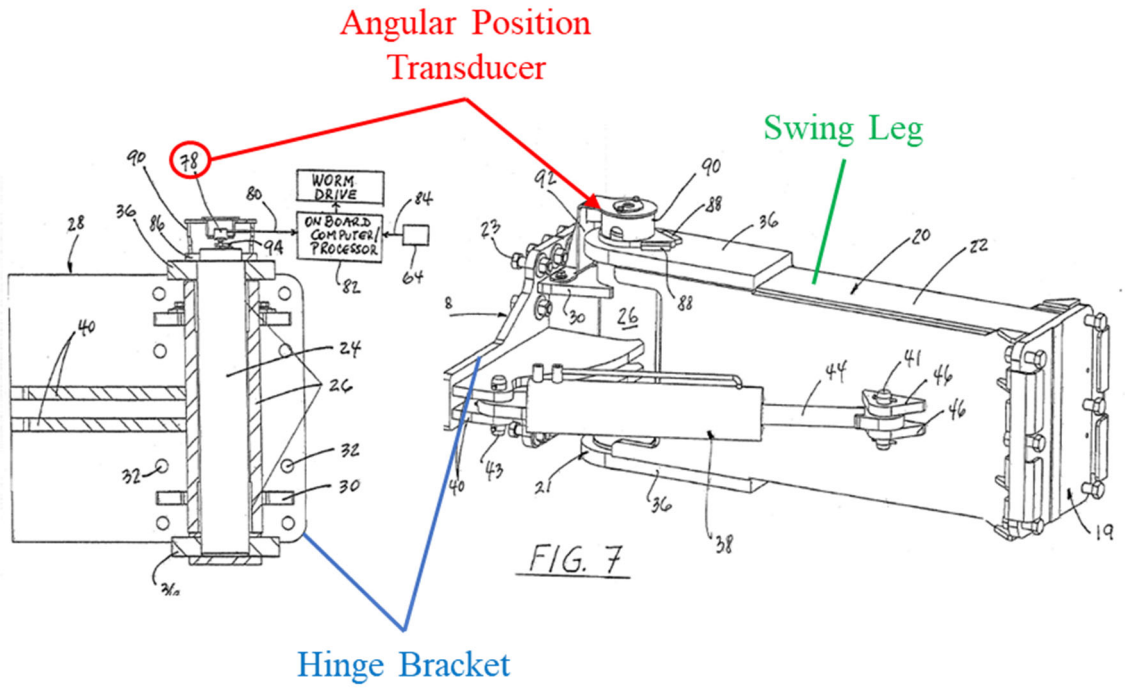
Guntert discloses a first "angular position transducer" between associated first jacking columns and first crawler tracks (as shown in Figure 4 below jacking column 14 and above track 16). Guntert, Claim 2, ¶¶[0046]-[0047]. The transducer "emit[s] a first position signal which is indicative of the angular orientation of the crawler track relative to the associated jacking column." *Id.* Claim 2; *see also id.*, ¶¶[0046]-[0047], Fig. 4; Singhose, ¶90.



Guntert, Figs. 4-4A (annotated).

b. [3b]: "a second angular position transducer between the first swing leg and the hinge bracket, emitting a second signal which is indicative of the angular orientation of the first swing leg relative to the hinge bracket; and"

Guntert discloses a second angular position transducer between the first swing leg and the hinge bracket, emitting a second signal which is indicative of the angular orientation of the first swing leg relative to the hinge bracket. Guntert, Claim 2, ¶¶[0048]-[0050]; Singhose, ¶91. The angular position transducer 78 is mounted inside a protective can 90 between the hinge bracket and swing leg. Guntert, ¶[0049].



Guntert, Figs. 5 & 7 (annotated). The transducer "generates an angular position signal which reflects the angular inclination between the pivot shaft and the hinge bracket, and which changes when the bolster swing leg 20 changes its angular position relative to the hinge bracket." *Id.*, ¶[0050]; Singhose, ¶91.

c. [3c]: "a processor receiving the first signal and second signal and emitting a control signal for activating the first power drive and thereby rotationally moving the first crawler track relative to the first jacking column for keeping the first crawler track oriented in the paving direction in response to changes of the first signal caused by pivotal motions of the first swing leg about the pivot shaft."

Guntert discloses "a processor receiving the first and second signals and emitting a control signal for activating the power drive and thereby rotationally

moving the crawler tracks," including the first crawler track, "relative to the associated jacking columns for keeping the crawler tracks oriented in the paving direction in response to changes of the first signal caused by pivotal motions of the swing leg about the pivot shaft." Guntert, Claim 2, ¶¶[0051]-[0052]; Singhose, ¶92.

7. Claim 4: "A paving machine according to claim 1 wherein the first power drive further comprises a first helical worm gear drive and a second helical worm gear drive, diametrically opposed, wherein the first and second helical worm gear drives engage and drive a ring gear disposed between them."

As discussed in Section VII.A.4.e, Guntert discloses a rotary actuator ("power drive"). Guntert discloses that the rotary actuator comprises a worm gear drive having "a ring gear 58 that is driven by a pair of diametrically opposite, hydraulically activated helical worm drives 61" ("the first power drive further comprises a first helical worm gear drive and a second helical worm gear drive, diametrically opposed, wherein the first and second helical worm gear drives engage and drive a ring gear disposed between them"). Guntert, ¶[0045], Claim 4; Singhose, ¶93.

8. Claim 5: "A paving machine according to claim 3, wherein the first power drive further comprises a slew gear drive, configured to receive the control signal and maintain the first crawler track in the paving direction."

Guntert discloses a computer 82 that "signals by how much worm gear drive 60" ("the first power drive further comprises a slew gear drive") must rotate the crawler tracks 16 to "align the crawler tracks with the paving direction," repeating this process any time the tracks become misaligned from the paving direction ("configured to receive the control signal and maintain the first crawler track in the paving direction"). Guntert, ¶¶ [0052], [0017], [0043], [0045]; Singhose, ¶94. A POSITA would have understood that repeatedly aligning the crawler tracks with the paving direction involves maintaining the first crawler track in the paving direction. Singhose, ¶94.

9. Claim 6: "A paving machine according to claim 3 including a feedback for maintaining an orientation for each of the first, second, and third crawler tracks at predetermined positions independently of angular inclinations of the first, second, and third crawler tracks relative to either the forward or aft bolsters."

Guntert discloses "a feedback for maintaining an orientation of the crawlers," including the first, second and third crawler tracks, "parallel to each other" ("at predetermined positions") "independently of angular inclinations of the crawlers relative to bolsters." Guntert, Claim 6, ¶¶[0017], [0052]-[0053]; Singhose, ¶95.

10. Claim 7: "A paving machine according to claim 6 including a feedback loop operatively coupled to the first swing leg and the first crawler track for angularly repositioning the first crawler track relative to the first swing leg in response to angular motions of the first swing leg about the pivot connection, thereby keeping the first crawler track oriented in a travel direction."

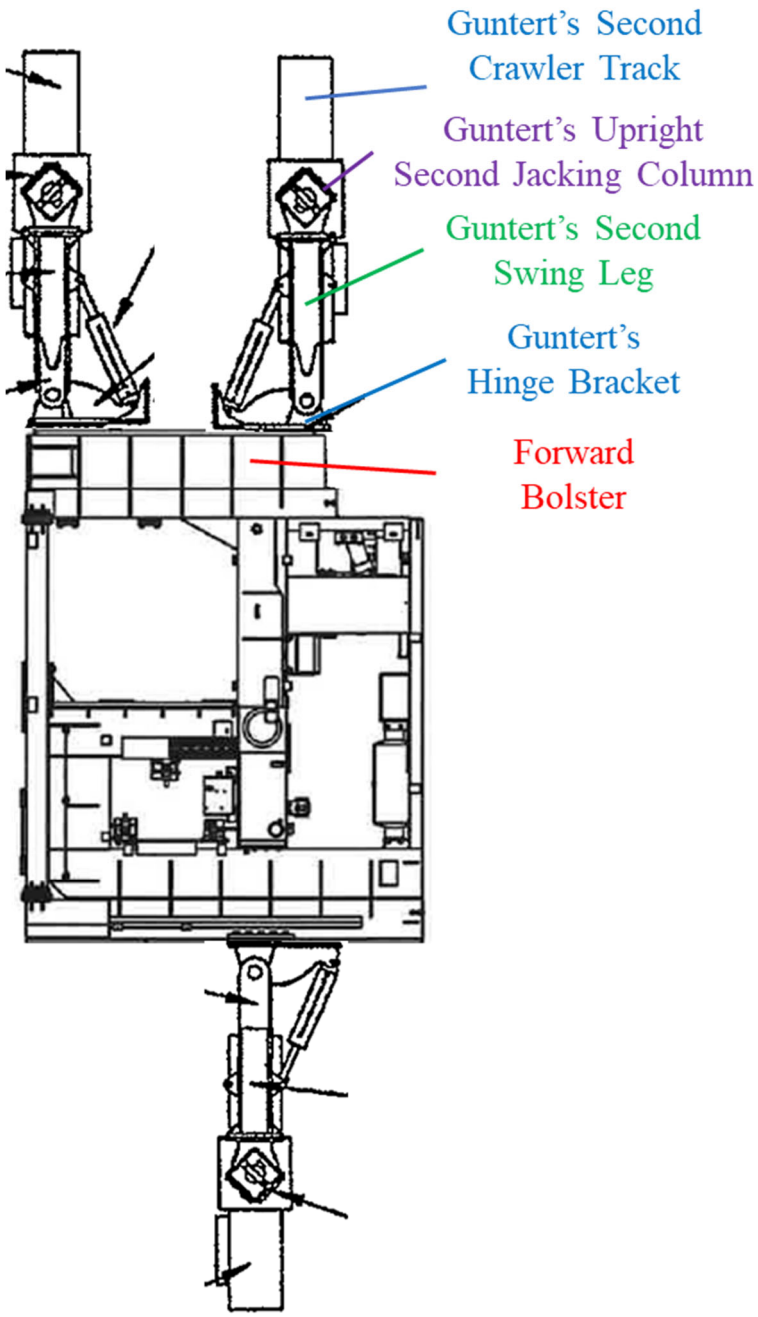
Guntert discloses "a feedback loop operatively coupled to the bolster swing legs and the crawler tracks," including the first swing leg and the first crawler track, "for angularly repositioning the crawler tracks relative to the respective swing legs in response to angular motions of the bolster swing leg about the pivot connection for keeping the crawler tracks oriented in the travel direction." Guntert, Claim 11, ¶¶[0017], [0051]-[0052]; Singhose, ¶96.

Notably, in the district court claim construction proceedings, GOMACO asserted that "feedback loop" means "a circuit, device, or system in which a portion of the output is returned to the input," and G&Z asserted that it means "a loop formed with the onboard computer/processor and the transducers." Ex. 1021, 6. Because the processor in Guntert continuously receives signals from position transducers 70, 78, continuously drives the crawler track to the desired position based on those signals, and continues to receive and use changes in those signals, Guntert satisfies claim 7 under both parties' constructions. Guntert, ¶¶[0017], [0051]-[0052]; Singhose, ¶97. Indeed, Guntert explicitly refers to its disclosure as

being a "feedback loop." *Id.*, ¶[0052] ("Onboard computer or processor 82 and the associated transducers 70, 78 form a feedback loop.").

11. Claim 9: "A paving machine according to claim 1, wherein the forward bolster is mechanically coupled to a second swing leg, an upright second jacking column secured to the second swing leg, and a rotary connection between the second jacking column and the second crawler track permitting relative rotational movements of the second crawler track and the second jacking column about an upright axis, and wherein the second swing leg further includes a second power drive between the second jacking column and the second crawler track, configured for translating relative rotational movements between the second jacking column and the second crawler track."

Guntert discloses that each crawler 16 ("second crawler track") and the associated jacking column 14 ("upright second jacking column") are mounted to a bolster swing leg 20 ("an upright second jacking column secured to the second swing leg"). Guntert, ¶[0036]; Singhose, ¶98. As discussed in Section VII.A.4.d, it would have been obvious to mechanically couple Guntert's second crawler track to CIII's forward bolster through couplings with Guntert's swing leg, the jacking column, and the hinge bracket ("the forward bolster is mechanically coupled to a second swing leg" and "an upright second jacking column"). Singhose, ¶98; *see* Section VII.A.3. This is shown below.



Singhose, ¶98 (combining aspects of CIII, 6-3 and Guntert, Fig. 6). The forward bolster is mechanically coupled to the claimed "rotary connection," and the second swing leg includes the claimed "second power drive" for the reasons discussed in

Section VII.A.4.e regarding the rotary connection and first power drive between the first jacking column and first crawler track. Singhose, ¶98.

12. Claim 10: "A paving machine according to claim 9 further comprising: a hinge bracket interposed between the second swing leg and an associated surface of the forward bolster; an upright pivot shaft that engages the second swing leg that permits pivotal movements of the second swing leg relative to the hinge bracket about an upright axis in a substantially horizontal plane, the hinge bracket including a pivot connection point that is laterally spaced from the pivot shaft; and a hydraulic actuator mounted on the hinge bracket, arranged to control the pivoting of the second swing leg relative to the center module."

Claim 10 requires the same features for the second swing-leg assembly as claim 2 does for the first. Singhose, ¶99. Thus, as discussed in Section VII.A.5 regarding the first swing leg, Guntert in view of CIII renders obvious these features regarding the second swing leg. Singhose, ¶100.

13. Claim 11

a. [11a]: "A paving machine according to claim 10 further comprising: a first angular position transducer between the second jacking column and the second crawler track, emitting a first position signal which is indicative of an angular orientation of the second crawler track relative to the second jacking column;"

[11b] "a second angular position transducer between the second swing leg and the hinge bracket, emitting a second signal which is indicative of the angular orientation of the second swing leg relative to the hinge bracket; and"

[11c]: "a processor receiving the first signal and second signal and emitting a control signal for activating the second power drive and thereby rotationally moving the second crawler track relative to the second jacking column for keeping the second crawler track oriented in the paving direction in response to changes of the first signal caused by pivotal motions of the second swing leg about the pivot shaft."

Claim 11 requires the same features for the second swing-leg assembly as claim 3 does for the first. Singhose, ¶101. Thus, as discussed in Sections VII.A.6.a, VII.A.6.b, and VII.A.6.c, Guntert discloses the claimed "first angular position transducer" between the second jacking column and crawler track, the claimed "second angular position transducer" between the second swing leg and hinge bracket, and "a processor receiving the first signal and second signal and emitting a control signal for activating the second power drive and thereby rotationally

moving the second crawler track relative to the second jacking column for keeping the second crawler track oriented in the paving direction in response to changes of the first signal caused by pivotal motions of the second swing leg about the pivot shaft." Singhose, ¶¶102-04.

14. Claim 12

a. [12a]: "A paving machine according to claim 11 further comprising: a feedback for maintaining an orientation of the first crawler track and the second crawler track relative to each other independently of angular inclinations of the first and second crawler tracks relative to the forward and aft bolsters; and"

Limitation [12a] requires the same features as claim 6 does, except that claim 6 requires the first and second crawler tracks (and third) to be maintained "at predetermined positions, and limitation [12a] requires them to be maintained "relative to each other." Singhose, ¶105. Thus, for the reasons discussed in Section VII.A.9, Guntert discloses "a feedback for maintaining an orientation of the first crawler track and the second crawler track relative to each other independently of angular inclinations of the first and second crawler tracks relative to the forward and aft bolsters." Singhose, ¶106.

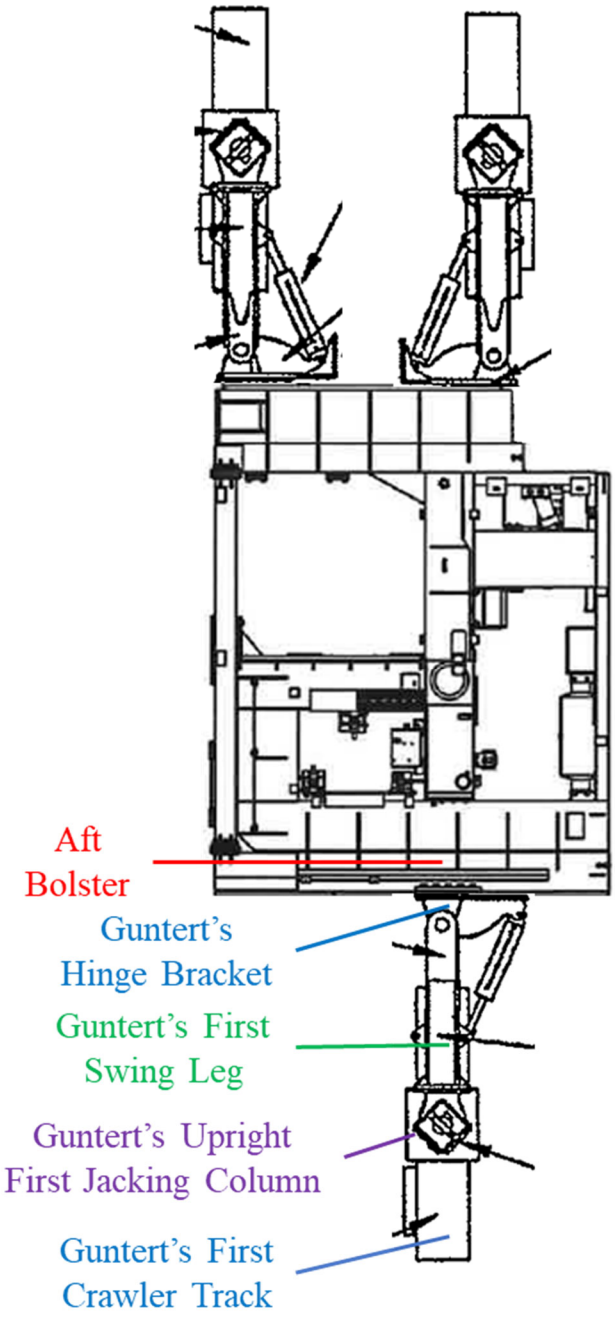
b. [12b] "a feedback loop operatively coupled to the second swing leg and the second crawler track for angularly repositioning the second crawler track relative to the second swing leg in response to angular motions of the second swing leg about the pivot connection, thereby keeping the second crawler track oriented in the paving direction."

Limitation [12b] requires the same features for the second swing-leg assembly as claim 7 does for the first. Singhose, ¶105. Thus, for the reasons discussed in Section VII.A.10 regarding a feedback loop operatively coupled to the first swing leg and crawler track, Guntert discloses "a feedback loop operatively coupled to the second swing leg and the second crawler track for angularly repositioning the second crawler track relative to the second swing leg in response to angular motions of the second swing leg about the pivot connection, thereby keeping the second crawler track oriented in the paving direction." Singhose, ¶107.

15. Claim 13: "A paving machine according to claim 1, wherein the aft bolster is mechanically coupled to an aft swing leg, an upright aft jacking column secured to the aft swing leg, and a rotary connection between the aft jacking column and the third crawler track permitting relative rotational movements of the third crawler track and the aft jacking column about an upright axis, and wherein the aft swing leg further includes a third power drive between the aft jacking column and the third crawler track, configured for translating relative rotational movements between the aft jacking column and the third crawler track."

Guntert discloses that each crawler 16 ("third crawler track") and the associated jacking column 14 ("upright aft jacking column") are mounted to a

bolster swing leg 20 ("an upright aft jacking column secured to the aft swing leg"). Guntert, ¶[0036]; Singhose, ¶108. As discussed in Section VII.A.4.d, it would have been obvious to couple Guntert's third crawler track to the aft bolster with Guntert's swing leg, jacking column, and hinge bracket ("the aft bolster is mechanically coupled to an aft swing leg" and "an upright aft jacking column"). Singhose, ¶108; *see* Section VII.A.3. This is shown below.

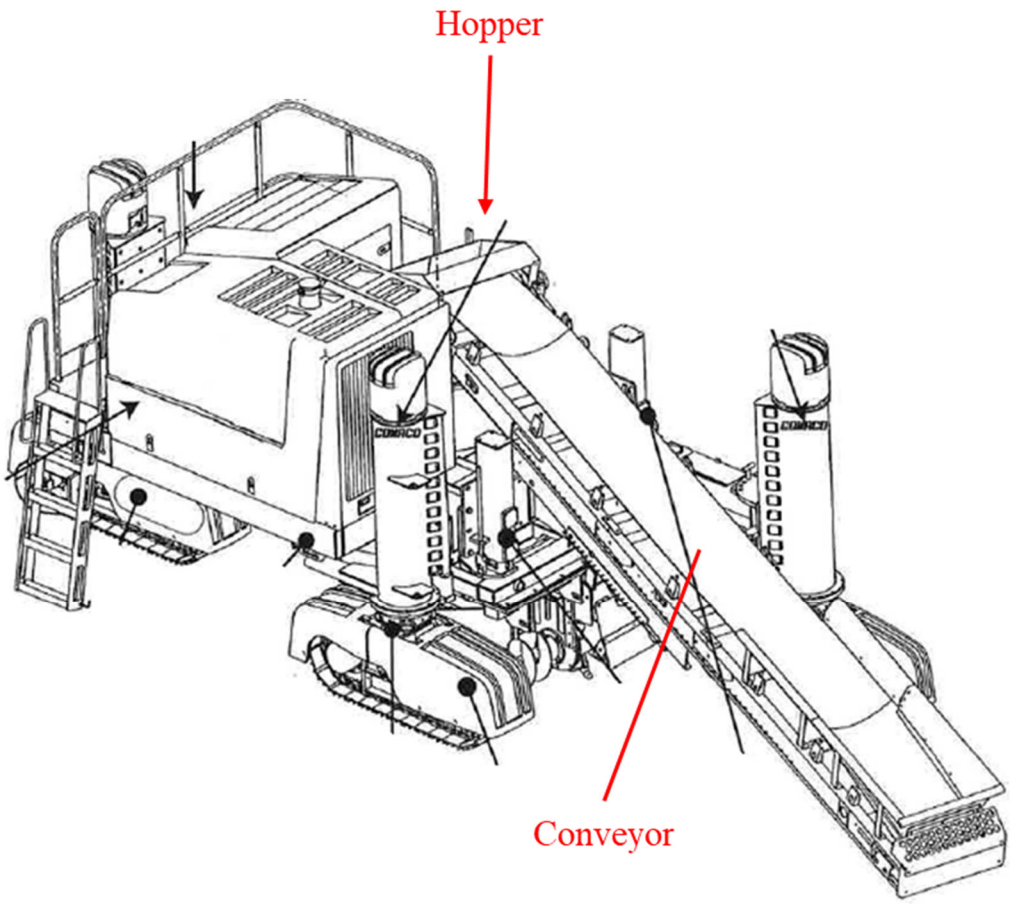


Singhose, ¶108 (combining aspects of CIII, 6-3, and Guntert, Fig. 6). The aft bolster is mechanically coupled to the claimed "rotary connection," and the aft swing leg includes the claimed "third power drive" for the reasons discussed in

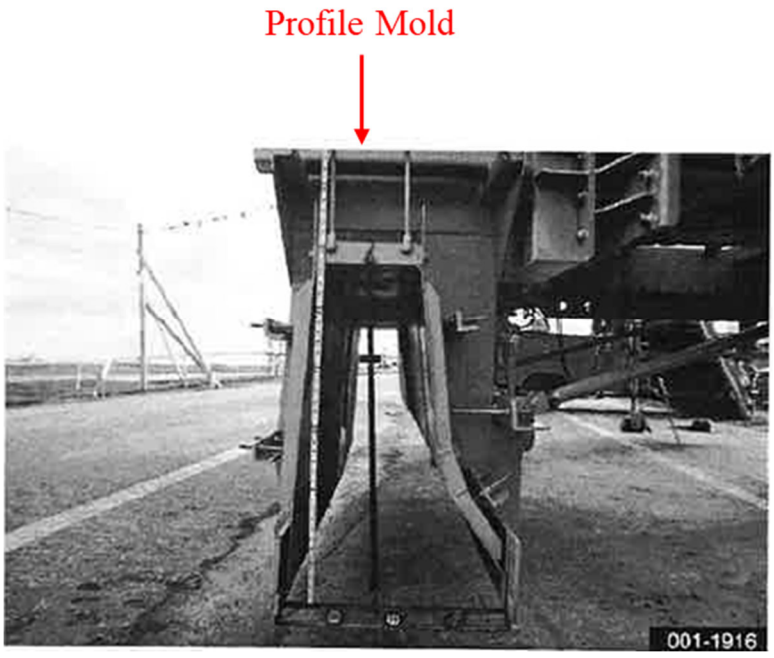
Section VII.A.4.e regarding the rotary connection and first power drive between the first jacking column and first crawler track. Singhose, ¶108.

16. Claim 14: "A paving machine according to claim 1 further comprising: a conveyor arranged to deliver semi-solid concrete to a hopper; the hopper arranged to receive and vibrate semi-solid concrete; and a profile mold, arranged to receive semi-solid concrete from the hopper and configured to lay down concrete in a shaped form."

CIII discloses a conveyor arranged to deliver semi-solid concrete to a hopper that vibrates the concrete and delivers it to a profile mold configured to lay the concrete in a shaped form. Singhose, ¶109.

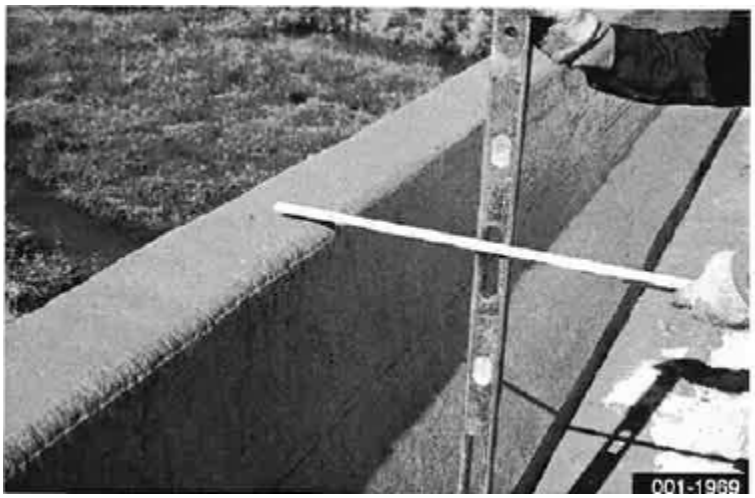


CIII, 1-13 (annotated).



Id., 4-2 (annotated). CIII describes how concrete is discharged "onto the conveyor belt from the supply truck." CIII, 3-50. The conveyer is started and stopped as necessary to "[f]ill the hopper of the slipform mold" and "[k]eep the slipform hopper at least three fourths full." *Id.* Vibrators are used "to force the concrete back into the form" and then the machine paver is moved forward allowing the concrete to slip from the back of the form. *Id.* CIII discloses that it may be necessary to increase or decrease the vibration, depending on how wet or dry the concrete mix is. CIII, 3-52. A POSITA would understand from these disclosures that the CIII's paver includes the claimed conveyor, hopper, and profile mold and that these components are arranged to deliver, receive, and vibrate semi-solid

concrete and then lay down the concrete in a shaped form. Singhose, ¶109. The image below depicts concrete laid down by CIII's profile mold in a shaped form. Singhose, ¶109.



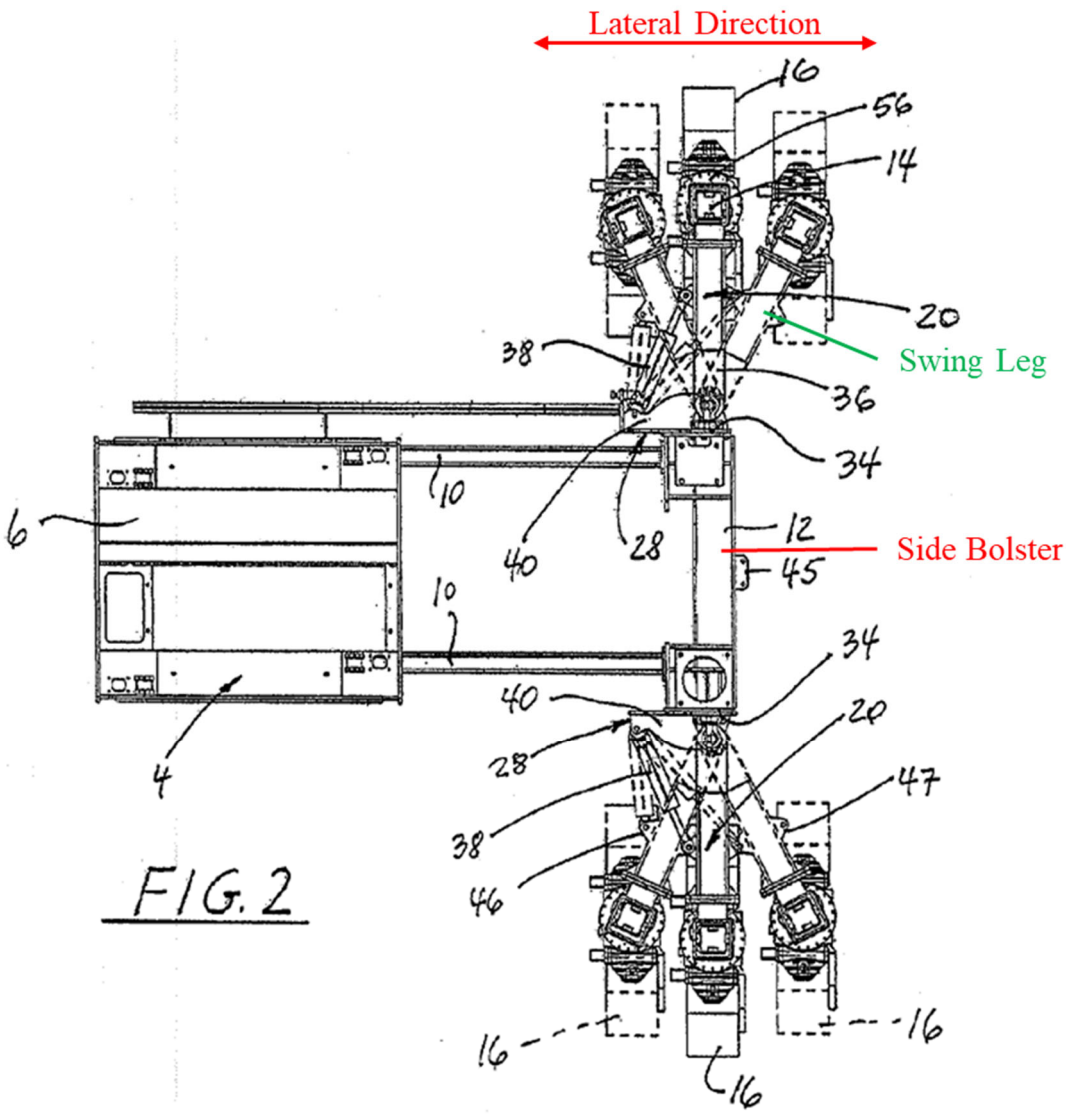
CIII, 4-26.

A POSITA would have been motivated to combine Guntert and CIII to include the claimed "conveyor," "hopper," and "profile mold." Singhose, ¶110. A POSITA would have known that paving taller barriers, like the one depicted above, requires elevating the concrete mix and that a conveyor delivering concrete to an elevated hopper is a well-known configuration for doing so. CIII, 3-50; Smolders, 5:45-46, 6:3-5, Fig. 4 (disclosing a conveyor belt with "an infeed hopper 90 arranged on its lower end and a discharge hop[p]er 92 on its upper end"); Singhose, ¶110. A POSITA would have known that CIII discloses a paver configured to pave barriers and that its disclosure of a conveyor, hopper, and

profile mold would facilitate such paving. For the reasons stated here and in VII.A.3, it would have been obvious to combine Guntert and CIII to achieve a paver specifically configured for paving barriers by modifying Guntert to use CIII's frame, including its conveyor, hopper, and profile mold. Singhose, ¶110. Combining Guntert and CIII as discussed in Section VII.A.3 would result in a paver having these features because CIII's frame would be equipped with a conveyor, hopper, and profile mold. Singhose, ¶110.

17. Claim 15: "A paving machine according to claim 1, further wherein at least one of: the first swing leg is laterally and movably connected to the forward bolster, the paving machine further comprises a second swing leg that is laterally and movably connected to the forward bolster, or the paving machine further comprises an aft swing leg that is laterally and movably connected to the aft bolster."

Guntert discloses that the swing legs "are free to pivot relative to bolsters 12 in a horizontal plane (as indicated in FIG. 2)" ("the first swing leg is laterally and movably connected to" the bolster"). Guntert, ¶[0038]; Singhose, ¶111.



Guntert, Fig. 2 (annotated).

For the reasons discussed in Section VII.A.4.e, it would have been obvious to connect the first swing leg to CIII's forward bolster ("the first swing leg is laterally and movably connected to the forward bolster"). Singhose, ¶112; *see* Section VII.A.3.

In district court, G&Z has accused a swing leg similarly connected to the machine of satisfying this limitation. Ex. 1016, 27-28; Singhose, ¶113.

B. Ground 2: Guntert, CIII, and Dahm Render Obvious Claim 8

1. Summary of Dahm

Dahm discloses a slip-form paver equipped with four ground engaging units 34 connected to a frame 12 by swing legs 36. Dahm, ¶¶[0050], [0056]. The frame 12 includes left and right sides 20 and 22 that connect to main frame module 24 through telescoping assemblies 26, 28, 30, and 32. *Id.*, ¶[0052]. Several of these features are depicted below.

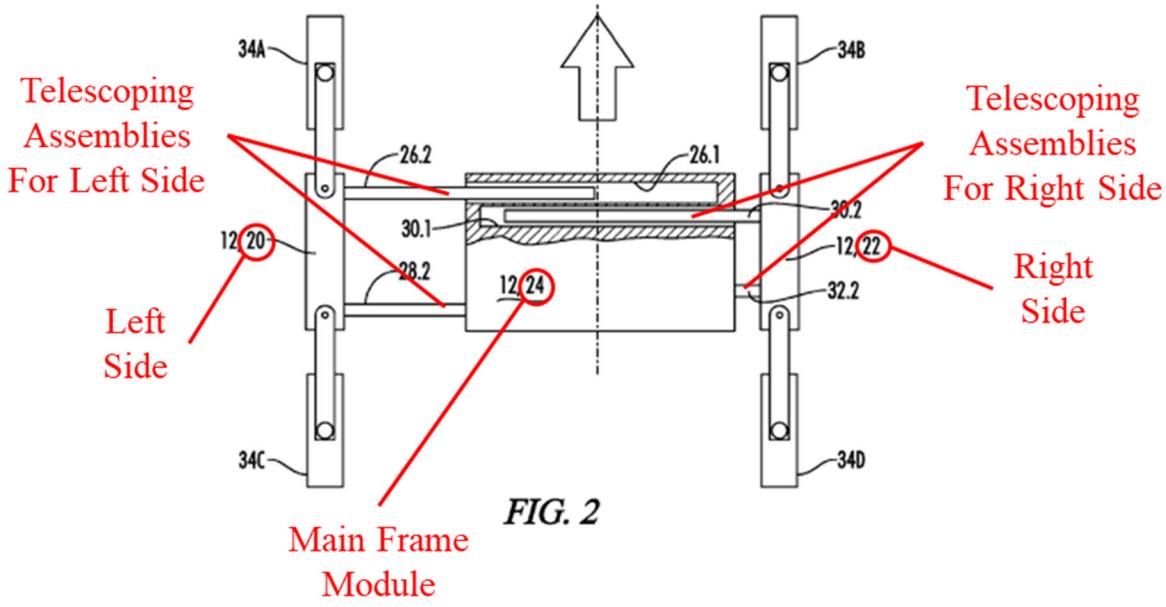


FIG. 2

Dahm, Fig. 2 (annotated).

The telescoping leg assemblies include linear actuators 66 and 76, each of which are equipped with an extension sensor that send signals to a controller 132.

Id., ¶¶[0071]-[0073], [0085]. The extension sensor monitors the extension of the associated linear actuator, allowing the controller to "determine a specific amount of desired movement of the telescoping frame assembly 26" and "exactly control" the extension of the linear actuator. *Id.*, ¶¶[0094], [0133]. Monitoring extension with the extension sensors allows the telescoping parts to be clamped in place after a desired extension or retraction. *Id.*, ¶[0136].

2. Rationale for Combining Dahm with Guntert and CIII

As discussed in Sections VII.A.3 and VII.A.4.d, it would have been obvious to use CIII's frame and bolster design in combination with Guntert to have a three-track paver with either one or multiple swing legs. For example, a POSITA would have known to replace CIII's front-left swing-leg assembly with a Guntert swing-leg assembly. *See* Section VII.A.4.d. Alternatively, a POSITA would have known to combine Guntert and CIII to achieve a three-track slipform paver, where two tracks are coupled to swing legs and one track is coupled to a laterally telescoping leg. Singhose, ¶116. Either design would have been obvious over Guntert and CIII. *Id*. (further illustrating both design modifications described in this paragraph); *see also* CIII, 3-13–18.

A POSITA would have been motivated to use Dahm's sensor/actuator design on the Guntert-CIII paver's telescoping leg to precisely determine the lateral position of the leg (and thus the crawler track attached to the leg). Singhose,

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¶¶117-20. Guntert, CIII, and Dahm disclose slipform pavers having at least one swing-leg assembly and are thus analogous art and in the same field of endeavor as the '571 patent. *See* Section VII.A.3; Dahm, ¶[0050]; Singhose, ¶117.

CIII discloses that, in a three-track configuration, certain leg/track positions provide more stability during paving operations. CIII, 3-18. CIII addressed this issue through its front-left swing leg, laterally telescoping leg, and slidable aft leg, all of which can be positioned at different widths for improved stability. CIII, 3-13–18; Singhose, ¶118.

Regarding the telescoping leg, CIII discloses a cylinder that is extended or retracted by using jog switches. CIII, 3-13–15. A POSITA would have been motivated to incorporate Dahm's extension sensor/actuator design to allow Guntert's computer to determine the telescoping leg's precise lateral position. Dahm, ¶[0094]; Singhose, ¶119; Section VII.B.1. A POSITA would have known that doing so would have allowed for even more stability (because the telescoping leg's position can be determined with even more specificity). Singhose, ¶119. Further, using a sensor on the telescoping leg would have allowed precise lateral adjustments to the position of the crawler track and the programming of a maximum or minimum extension of the telescoping leg. Singhose, ¶119.

A POSITA would have had a reasonable expectation of success in making the Dahm modification proposed above—it involves combining well-known prior-

art elements according to known methods to yield predictable results. Singhose, ¶120. Dahm already allows a controller to "exactly control" the lateral positioning of a telescoping feature on a slipform paver. Dahm, ¶[0094]. Indeed, Dahm's actuator with extension sensor enables lateral movement of a mechanically coupled leg and crawler track (and monitoring of that movement). A POSITA would have known that the extension sensor would operate the same way when implemented in the telescoping leg of the Guntert-CIII paver (i.e., a sensor is used to track the lateral positional width of a component). Singhose, ¶120.

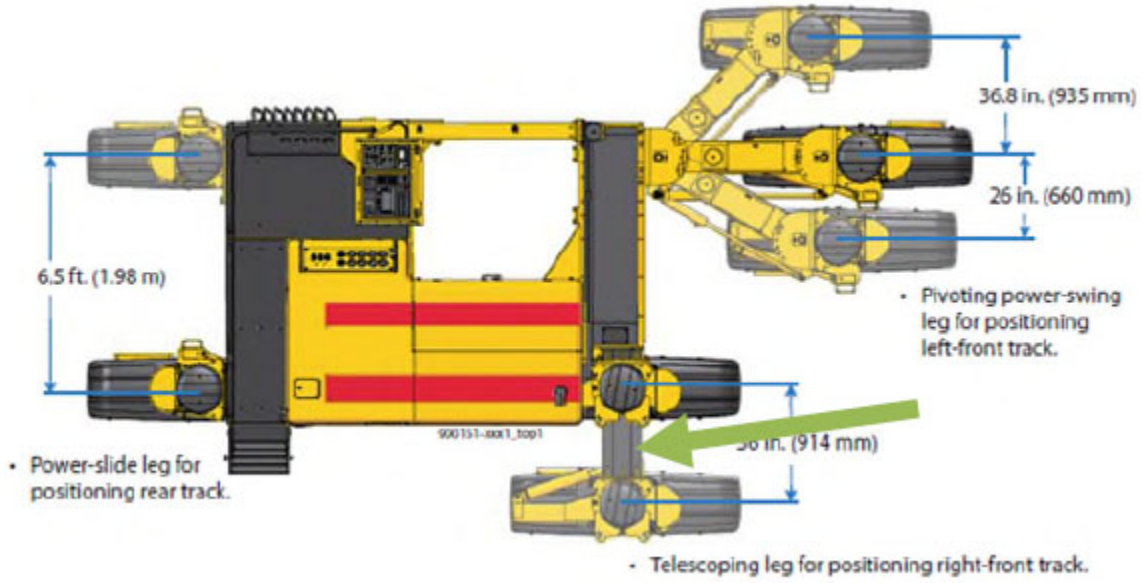
3. Claim 8

a. [8a]: "A paving machine according to claim 1, wherein the forward bolster is mechanically coupled to a laterally telescoping leg, configured to extend from the center module in a direction perpendicular to the forward end, wherein the second crawler track is mechanically coupled to the laterally telescoping leg via an upright second jacking column, and further comprising:"

CIII discloses a forward bolster mechanically coupled to a "right front leg" with a cylinder that extends/retracts to move the leg relative to the front bolster and center module ("the forward bolster is mechanically coupled to a laterally telescoping leg, configured to extend from the center module in a direction perpendicular to the forward end"). CIII, 2-5, 3-13–15; *see* Sections VII.A.3 and VII.A.4.d; Singhose, ¶121. The leg is perpendicularly extendable from or

retractable into the forward bolster, satisfying Gomaco's district court construction for this term. CIII, 2-5, 3-13–15; Singhose, ¶121; Ex. 1021, 6. Guntert discloses a second crawler track coupled to an upright second jacking column. *See* Section VII.A.11. As discussed in Section VII.A.4.d, it would have been obvious to mechanically couple the second crawler track to the laterally telescoping leg via the upright second jacking column. Singhose, ¶121.

In district court, G&Z asserted that no construction of "laterally telescoping leg" is necessary and described it as "simply a leg that can telescope laterally, i.e., that it extends to the side." Ex. 2021, 6; Ex. 1034, 15. Thus, under either G&Z's or GOMACO's construction, CIII discloses limitation [8a]. Singhose, ¶122. Further, G&Z's infringement contentions identify (green arrow, below) a virtually identical telescoping-leg configuration as satisfying limitation [8a]. Ex. 1016, 16-17.



Id., 17.

b. [8b]: "an angular position transducer between the second jacking column and second crawler track, emitting a first position signal which is indicative of an angular orientation of the second crawler track relative to the second jacking column;"

Limitation [8b] is nearly identical to the relevant portion of limitation [11a]. Singhose, ¶123. Guntert discloses these features, as discussed in Section VII.A.13.a. Singhose, ¶124.

c. [8c]: "a linear position transducer between the laterally telescoping leg and the forward bolster, emitting a second signal which is indicative of the position of the laterally telescoping leg relative to the center module; and"

Dahm discloses an extension sensor 55[12] ("linear position transducer") incorporated in a linear actuator that emits a signal indicative of the extension of the linear actuator and thus the position of the telescoping assemblies associated with the linear actuator. Dahm, ¶¶[0034], [0073], [0094] (noting that the extension sensor monitors the stroke or extension of the hydraulic ram), [0133]-[0134] (the sensor "allows the extension of each of the telescoping assemblies to be monitored"); Singhose, ¶125.

[12] In district court, G&Z's expert, Dr. Bryden testified that a sensor is a transducer. *See* Ex. 1013, 139:13-140:7.

As stated in Section VII.B.2, it would have been obvious to modify CIII's telescoping leg with Dahm's actuator and extension sensor design. Singhose, ¶126. By providing an extension sensor in the cylinder that extends/retracts the telescoping leg, a POSITA would have understood that the extension sensor is between the laterally telescoping leg and the forward bolster and emits a second signal which is indicative of the position of the laterally telescoping leg relative to the center module. Singhose, ¶126.

d. [8d]: "a processor receiving the first signal and second signal and emitting a control signal for maintaining the first crawler track and the second crawler track as oriented in the paving direction in response to changes of the first signal caused by motions of either the first swing leg or the laterally telescoping leg relative to the center module."

Dahm discloses a controller 132 that "receives input signals" from the frame extension sensors, determines the amount of desired movement of the telescoping frame assembly, and controls the extension of the linear actuators associated with the extension sensors. Dahm, ¶[0094]; Singhose, ¶127.

Guntert discloses "a processor receiving the first and second signals and emitting a control signal for activating the power drive and thereby rotationally moving the crawler tracks," including the first and second crawler tracks, "relative to the associated jacking columns for keeping the crawler tracks oriented in the paving direction in response to changes of the first signal caused by pivotal

motions of the swing leg about the pivot shaft." Guntert, Claim 2, ¶¶[0051]-[0052]. When modifying CIII's laterally telescoping leg with Dahm's extension sensor, as discussed in Sections VII.B.3.a-VII.B.3.c, it would have been obvious for Guntert's processor to also receive the signal emitted by the extension sensor ("a processor receiving the first signal and second signal")—since Dahm discloses that its controller receives the input signals from the extension sensors. Dahm, ¶[0085]; Singhose, ¶128. Further, it would have been obvious for Guntert's processor to emit a signal to maintain the first and second crawler tracks in the paving direction in response to changes of the first signal caused by motions of either the first swing leg or the laterally telescoping leg relative to the center module. Singhose, ¶128. Guntert discloses a processor that receives outputs from transducers and generates a signal to keep the crawler tracks oriented and synchronized in the paving direction, so using a signal from a linear position transducer would have been an obvious substitution of one known element for another. Guntert, ¶[0017]; *see* Section VII.B.2; Singhose, ¶128.

VIII. MANDATORY NOTICES

A. Real Party-in-Interest

The real party-in-interest is Godbersen-Smith Construction Company, for which GOMACO Corporation is a registered active fictious name. No unnamed

entity is funding, controlling, or otherwise has an opportunity to control or direct this Petition or Petitioner's participation in any resulting IPR.

B. Related Matters Under 37 C.F.R. § 42.8(b)(2)

G&Z has asserted the '571 patent in litigation captioned *Guntert & Zimmerman Const. Div., Inc. v. GOMACO Corp.*, Case No. 5:20-cv-4007-CJW-KEM (N.D. Iowa). GOMACO has filed a petition for IPR on related U.S. Patent No. 10,029,749, captioned *Godbersen-Smith Construction Company d/b/a GOMACO Corporation v. Guntert & Zimmerman Const. Div., Inc.*, Case IPR2020-01698 (filed October 1, 2020), and has filed a petition for IPR on related U.S. Patent No. 9,702,020, captioned *Godbersen-Smith Construction Company d/b/a GOMACO Corporation v. Guntert & Zimmerman Const. Div., Inc.*, Case IPR2021-00050 (filed October 14, 2020). Moreover, on the same day it filed this IPR, GOMACO concurrently filed a separate IPR on the '571 patent, *Godbersen-Smith Construction Company d/b/a GOMACO Corporation v. Guntert & Zimmerman Const. Div., Inc.*, Case IPR2021-00136, as well as an IPR on another G&Z patent (U.S. Patent No. 10,053,167), *Godbersen-Smith Construction Company d/b/a GOMACO Corporation v. Guntert & Zimmerman Const. Div., Inc.*, Case IPR2021-00161.

C. Lead and Back-Up Counsel

Petitioner designates lead and back-up counsel as noted below. Powers of attorney pursuant to 37 C.F.R. § 42.10(b) accompany this Petition.

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D. Service Information Under 37 C.F.R. § 42.8(b)(4)

Please address all correspondence to counsel at the address above. Petitioner consents to electronic service by email at: Gomaco-IPRs@finnegan.com.

IX. GROUNDS FOR STANDING

Pursuant to 37 C.F.R. § 42.104(a), Petitioner certifies that the '571 patent is available for IPR and the Petitioner is not barred or estopped from requesting IPR.

X. CONCLUSION

The Challenged Claims should be canceled for the reasons discussed above.

Dated: November 6, 2020

By: /Jason Stach/
Jason Stach, Lead Counsel
Reg. No. 54,464

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CERTIFICATION OF WORD COUNT

Pursuant to 37 C.F.R. § 42.24(c) and (d), Petitioner certifies that the word count of Petitioner's Petition for Inter Partes Review (exclusive of any table of contents, table of authorities, mandatory notices under § 42.8, certificates of service and word count, and list of exhibits or claim listing) as measured by Microsoft Word is 13,954.

Dated: November 6, 2020

By: /Jason Stach/
Jason Stach, Lead Counsel
Reg. No. 54,464

CERTIFICATE OF SERVICE

The undersigned certifies that the foregoing Petition for *Inter Partes* Review, the associated Power of Attorney, and Exhibits 1001-1005, 1010, 1012-1013, 1015-1021, 1026, 1028-1032, 1034-1036, were served on November 6, 2020, by FedEx Priority Overnight at the following address of record for the subject patent. The Confidential Exhibits 1012, 1100-1154 will be served when Protective Order acknowledgments are received, pursuant to 37 C.F.R. § 42.55.

IP Docketing - 22
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