

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

REFLEX USA LLC,
Petitioner,

v.

LONGYEAR TM, INC. and GLOBALTECH CORPORATION PTY LTD.,
Patent Owners.

IPR2023-00642
U.S. Patent 10,830,013

**PATENT OWNER'S REVISED CONTINGENT MOTION TO
AMEND UNDER 37 C.F.R. § 42.121**

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PATENT OWNER'S EXHIBIT LIST

Exhibit	Description
Ex.2001	File History for U.S. Patent No. 10,047,581
Ex.2002	U.S. Patent No. 10,047,581 (the “Grandparent Patent”)
Ex.2003	Table comparing independent claim 1 of the '013 Patent, the Parent Patent, the Grandparent Patent, and the Child Patent
Ex.2004	Provisional Patent Application No. 61/982,052
Ex.2005	Deposition Transcript of Dr. John Rodgers (December 5, 2023)

I. INTRODUCTION

Patent Owner (PO) respectfully submits this Revised Motion to Amend under 35 U.S.C. § 316(d) and 37 C.F.R. § 42.121 contingent upon a finding of unpatentability with respect to originally challenged claim 1 of the '013 Patent. PO's motion substitutes proposed claim 26 for original claim 1.

PO previously submitted a Contingent Motion to Amend (Paper 20, "Original MTA") requesting preliminary guidance pursuant to the Board's ongoing motion to amend pilot program. *See* 84 Fed. Reg. 9497 (Mar. 15, 2019). Petitioner did not submit an opposition to the Original MTA. The Board provided preliminary guidance (Paper 22, "PG") on the Original MTA. PO respectfully submits this Revised Contingent Motion to Amend ("Revised MTA") in view of the PG. *See* 84 Fed. Reg. 9497.

In the PG, the Board indicated that "Patent Owner has shown a reasonable likelihood that it has satisfied the statutory and regulatory requirements associated with filing a motion to amend (with one exception regarding new matter)." PG, 3. That one exception was for a single adjective, "*operative*," in Limitation 26.13. PG, 8. The Board noted that there is support for the seal coupler and power source being in "*contact*" but not for them being in "*operative contact*." PG, 8. In response to the Board's statements, the sole revision in this Revised MTA removes the word "*operative*" from Limitation 26.13. The remainder of substitute claim 26

is the same as in the Original MTA. Accordingly, PO respectfully submits that revised Limitation 26.13 does not present new matter.

Accordingly, if the Board finds claim 1 unpatentable, PO respectfully requests that this Revised MTA be granted and the substitute claim presented herein be issued.

II. THE MOTION PRESENTS A REASONABLE NUMBER OF SUBSTITUTE CLAIMS.

“The presumption is that only one substitute claim would be needed to replace each challenged claim.” 37 C.F.R. § 42.121(a)(3). PO presents only one substitute claim for challenged claim 1. Accordingly, this motion proposes a reasonable number of substitute claims. The Board preliminarily found that the Original MTA satisfied this requirement. PG, 3-4.

III. THE SUBSTITUTE CLAIM DOES NOT ENLARGE THE SCOPE OF THE ORIGINAL CLAIM.

“A motion to amend may be denied where... [t]he amendment seeks to enlarge the scope of the claims of the patent.” 37 C.F.R. § 42.121(a)(2)(ii). Substitute claim 26 retains all the features of corresponding original claim 1 and only adds further limitations. Thus, the claim scope is not enlarged. The Board preliminarily found that the Original MTA satisfied this requirement. PG, 4.

IV. THE SUBSTITUTE CLAIM DOES NOT ADD NEW MATTER.

“A motion to amend may be denied where... [t]he amendment seeks to...introduce new subject matter.” 37 C.F.R. § 42.121(a)(2)(ii). A motion will meet this requirement if support is found “in the original disclosure of the patent for each claim that is added or amended” and “an earlier filed disclosure for each claim for which benefit of the filing date of the earlier filed disclosure is sought.” 37 C.F.R. § 42.121(b)(1)-(2); *see Lectrosonics, Inc. v. Zaxcom, Inc.*, IPR2018-01129, Paper 15 at 7 (Feb. 25, 2019) (precedential).

The '013 Patent issued from U.S. Patent Application No. 16/588,026 (the “'026 Application”) (Ex.1002, 251-299). The '013 Patent is a continuation of U.S. Patent No. 10,465,463 (the “Parent Patent”) (Ex.1010), which is a continuation of U.S. Patent No. 10,047,581 (the “Grandparent Patent”) (Ex.2002), which claims priority to Provisional Patent Application No. 61/982,052 (the “Provisional Application”) (Ex.2004). Both the '026 Application (the originally-filed disclosure for the '013 Patent) and the Provisional Application (the earliest-filed disclosure from which the '013 Patent claims priority) provide support for proposed substitute claim 26 as shown in the table below:

Proposed Substitute Claim 26	Support in the '026 Application	Support in the Provisional Application
[26.pre] <i>A core barrel head assembly ~~having an exterior surface and~~ comprising:</i>	“A core barrel head assembly....” Ex.1002, 287, Abstract.	“A core barrel head assembly....” Ex.2004, Abstract.

	<i>See also</i> Ex.1002, 283, claim 1; 253, [0009]; 258, [0040].	<i>See also</i> Ex.2004, claims 1-2; [0008]-[0009], [0035].
[26.1] <u><i>an integral elongate tube body having an exterior surface and comprising:</i></u>	“As shown in Figures 1 and 5-6, the core barrel head assembly 30 has an elongate tube body 60...” Ex.1002, 259, [0044]. “...the exterior surface 61 of the elongate tube body...” Ex.1002, 260, [0047]. As shown in Figs. 3-7, the elongate tube body is integral and has an exterior surface. <i>See also</i> Ex.1002, 253, [0009]; 260, [0045]-[0047]; 261-262, [0052]; 262-263, [0054]-[0055].	“As shown in Figures 1 and 5-6, the core barrel head assembly 30 has an elongate tube body 60...” Ex.2004, [0039]. “...the exterior surface 61 of the elongate body...” Ex.2004, [0042]. As shown in Figs. 3-7, the elongate tube body is integral and has an exterior surface. <i>See also</i> Ex.2004, claims -1-2, [0008], [0040]-[0041], [0047], [0049]-[0050], [0053].
[26.1.1] <u><i>a first interior cavity defined within the elongate tube body;</i></u>	“The threaded proximal end 62 of the elongate tube body 60 is in communication with a first interior cavity 64 that extends distally to a base portion 65.” Ex.1002, 260, [0045]. “...the first interior cavity of the elongate tube body.” Ex.1002, 268, [0075]. The first interior cavity is illustrated in Figs. 3 and 5-7.	“The threaded proximal end 62 of the elongate tube body 60 is in communication with a first interior cavity 64 that extends distally to a base portion 65.” Ex.2004, [0040]. “...the first interior cavity of the elongate body.” Ex.2004, [0059]. The first interior cavity is illustrated in Figs. 3 and 5-7. <i>See also</i> Ex.2004, [0041].

	<i>See also</i> Ex.1002, 283, claim 1; 260, [0046].	
[26.1.2] <i>a selectively sealed interior cavity defined within the elongate tube body and spaced distally from the first interior cavity, [[and]] the selectively sealed interior cavity having a closed proximal end;</i>	“A second interior cavity 70 is defined therein the elongate tube body 60 that is spaced from and extends distally from the first interior cavity. The second interior cavity 70 can be sized to hermetically enclose...” Ex.1002, 260, [0046]. “...both the sealing means on the respective orientation indicator module 80 and the seal coupler 90 are driven into a sealed position therein the second interior cavity to affect complete hermeticity of the second interior cavity.” Ex.1002, 262, [0055]. “...the closed proximal end 72 of the second interior chamber.” Ex.1002, 260, [0047]. The selectively sealed interior cavity (e.g. the second interior cavity) is illustrated in Figs. 3 and 5-7. <i>See also</i> Ex.1002, 261, [0049]; 261-263, [0052]-[0054].	“A second interior cavity 70 is defined therein the elongate tube body 60 that is spaced from and extends distally from the first interior cavity. The second interior cavity 70 can be sized to hermetically enclose...” Ex.2004, [0041]. “...both the sealing means on the respective orientation indicator module 80 and the seal coupler 90 are driven into a sealed position therein the second interior cavity to affect complete hermeticity of the second interior cavity.” Ex.2004, [0050]. “...the closed proximal end 72 of the second interior chamber.” Ex.2004, [0042]. The selectively sealed interior cavity (e.g. the second interior cavity) is illustrated in Figs. 3 and 5-7. <i>See also</i> Ex.2004, claims 1-2, [0043]-[0044], [0047]-[0049].

[26.1.3] <i>a threaded proximal end portion for coupling to a wire line retrieval portion of a head assembly;</i>	“As shown in Figures 1 and 5-6, the core barrel head assembly 30 has an elongate tube body 60 that is conventionally joined to a conventional wire line retrieval portion of a head assembly 10.” Ex.1002, 259, [0044]. “The threaded proximal end 62 of the elongate tube body 60...” Ex.1002, 260, [0045]. The threaded proximal end portion is illustrated in Figs. 3-6. <i>See also</i> Ex.1002, 283, claim 1; 264, [0060]-[0061].	“As shown in Figures 1 and 5-6, the core barrel head assembly 30 has an elongate tube body 60 that has a threaded proximal end 62 that is conventionally threaded to be conventionally joined to a conventional wire line retrieval portion of a head assembly 10.” Ex.2004, [0039]. “The threaded proximal end 62 of the elongate tube body 60...” Ex.2004, [0040]. The threaded proximal end portion is illustrated in Figs. 3-6.
[26.1.4] <i>a base portion, wherein the first interior cavity extends distally from the threaded proximal end portion to the base portion;</i>	“The threaded proximal end 62 of the elongate tube body 60 is in communication with a first interior cavity 64 that extends distally to a base portion 65.” Ex.1002, 260, [0045]. The base portion is illustrated in Figs. 3 and 5-7. <i>See also</i> Ex.1002, 283, claim 1.	“The threaded proximal end 62 of the elongate tube body 60 is in communication with a first interior cavity 64 that extends distally to a base portion 65.” Ex.2004, [0040]. The base portion is illustrated in Figs. 3 and 5-7.
[26.1.5] <i>an open and threaded distal end portion, wherein the</i>	“The core barrel head assembly of Claim 1, further comprising an open	“In another aspect, the second interior cavity 70 extends distally to the open

<u>selectively sealed interior cavity extends distally to the open and threaded distal end portion of the core barrel head assembly, and wherein the open and threaded distal end portion includes male threads defined on the exterior surface;</u>	and threaded distal end portion, wherein the sealed interior cavity extends distally to the open and threaded distal end portion of the core barrel head assembly.” Ex.1002, 284, claim 8. “In another aspect, the second interior cavity 70 extends distally to the open distal end 73 of the elongate tube body 60.... the open threaded distal end 73 of the elongate tube body 60.” Ex.1002, 261-262, [0052]. “...the male threads defined on the exterior surface of the distal end 73 of the elongate tube body 60.” Ex.1002, 262, [0054]. The open and threaded distal end portion is shown in Figs. 3-7. See also Ex.1002, 264, [0061].	distal end 73 of the elongate tube body 60.... the open threaded distal end 73 of the elongate tube body 60.” Ex.2004, [0047]. “...the male threads defined on the exterior surface of the distal end 73 of the elongate body 60.” Ex.2004, [0049]. The open and threaded distal end portion is shown in Figs. 3-7.
<u>[26.2] a seal coupler configured to be sealingly received in the open and threaded distal end portion of the elongate tube body;</u>	“The core barrel head assembly of Claim 8, further comprising a seal coupler that is configured to be sealingly received in the open threaded distal end portion of the core	“...a seal coupler 90 can be provided that is configured to be sealingly received in the open threaded distal end 73 of the elongate tube body 60.” Ex.2004, [0047].

	barrel head assembly.” Ex.1002, 284, claim 9. “...a seal coupler 90 can be provided that is configured to be sealingly received in the open threaded distal end 73 of the elongate tube body 60.” Ex.1002, 261-262, [0052]. The seal coupler is shown in Figs. 3-6. <i>See also</i> Ex.1002, 262-263, [0054]-[0055].	The seal coupler is shown in Figs. 3-6. <i>See also</i> Ex.2004, [0049]-[0050].
[26.3] <u>an O-ring seal for preventing any pressurized fluid from entering the selectively sealed interior cavity of the elongate tube body, wherein the O-ring seal is mounted on a portion of the seal coupler and is configured to seal between a portion of the seal coupler and a portion of an interior surface of the open and threaded distal end portion of the elongate tube body;</u>	“The core barrel head assembly of Claim 9, further comprising at least one second O-ring seal for preventing any pressurized fluid from entering the sealed interior cavity, wherein the at least one second O-ring seal is mounted on a portion of the seal coupler and is configured to seal between a portion of the seal coupler and a portion of an interior surface of the open and threaded distal end portion of the core barrel head assembly.” Ex.1002, 284, claim 10. “As noted, a sealing means can be provided to prevent any pressurized fluid from	“As noted, a sealing means can be provided to prevent any pressurized fluid from entering the second interior cavity. In one aspect, the sealing means can comprise at least one O-ring seal 95 that is mounted on a portion of the seal coupler and that is configured to seal between a portion of the seal coupler and a portion of the interior surface of the open distal end of the elongate body.” Ex.2004, [0047]. The O-ring seal is shown in Figs. 3-6.

	entering the second interior cavity. In one aspect, the sealing means can comprise at least one O-ring seal 95 that is mounted on a portion of the seal coupler and that is configured to seal between a portion of the seal coupler and a portion of the interior surface of the open distal end of the elongate tube body.” Ex.1002, 262, [0052]. The O-ring seal is shown in Figs. 3-6.	
[26.4.1] <u>a check valve assembly configured to affect a hermetical seal of the selectively sealed interior cavity of the elongate tube body and to provide fluid control for wire line operation,</u>	“The core barrel head assembly of Claim 6, further comprising a check valve assembly configured to affect a hermetical seal of the sealed interior cavity and to provide fluid control for wire line operation.” Ex.1002, 285, claim 11. “In a further aspect, to further effect a hermetical seal of the second interior cavity and to provide fluid control for the wire line operation, a check valve assembly 100 is provided.” Ex.1002, 262, [0053]. The check valve assembly is shown in Figs. 3-6.	“In a further aspect, to further effect a hermetical seal of the second interior cavity and to provide fluid control for the wire line operation, a check valve assembly 100 is provided.” Ex.2004, [0048]. The check valve assembly is shown in Figs. 3-6.

[26.4.2] <u>wherein the check valve assembly comprises a check ball, a coupled proximal end assembly, and a distally tapered seat that defines an interior chamber for operative receipt of the check ball, wherein the check ball is sized to selectively block the distally tapered seat,</u>	“The core barrel head assembly of Claim 11, wherein the check valve assembly comprises a coupled proximal end assembly and a distally tapered seat that defines an interior chamber for operative receipt of a check ball.” Ex.1002, 285, claim 12. “The core barrel head assembly of Claim 14, wherein the interior chamber has a distally tapered seat that is adapted to selectively receive the check ball that is sized to selectively block the distally tapered seat.” Ex.1002, 285, claim 15. “In one aspect, the check valve assembly 100 comprises a coupled proximal end assembly and a distally tapered seat that defines an interior chamber 110 for operative receipt of a check ball 120.” Ex.1002, 262, [0053]. “In this aspect, the interior chamber 110 can have a distally tapered seat 112 that is adapted to selectively receive the ball	“In one aspect, the check valve assembly 100 comprises a coupled proximal end assembly and a distally tapered seat that defines an interior chamber 110 for operative receipt of a check ball 120.” Ex.2004, [0048]. “In this aspect, the interior chamber 110 can have a distally tapered seat 112 that is adapted to selectively receive the ball 120 that is sized to selectively block the distally tapered seat.” Ex.2004, [0052]. The check ball, proximal end assembly, distally tapered seat, and interior chamber are shown in Figs. 3-6.
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	120 that is sized to selectively block the distally tapered seat.” Ex.1002, 263, [0057]. The check ball, proximal end assembly, distally tapered seat, and interior chamber are shown in Figs. 3-6.	
[26.5.1] <u>wherein the proximal end assembly of the check valve assembly defines a female threaded coupling that is configured to be threadably coupled to the male threads defined on the exterior surface of the open and threaded distal end portion of the elongate tube body, and</u>	“The core barrel head assembly of Claim 12, further comprising a distal end portion, wherein the proximal end assembly of the check valve assembly defines a female threaded coupling that is configured to be threadably coupled to male threads defined on an exterior surface of the distal end portion of the core barrel head assembly.” Ex.1002, 285, claim 13. “In one aspect, the proximal end assembly102 of the check valve assembly can define a female threaded coupling that is configured to be threadably coupled to the male threads defined on the exterior surface of the distal end 73 of the elongate tube body 60.” Ex.1002, 262 [0054].	“In one aspect, the proximal end assembly102 of the check valve assembly can define a female threaded coupling that is configured to be threadably coupled to the male threads defined on the exterior surface of the distal end 73 of the elongate body 60.” Ex.2004, [0049].

<u>[26.5.2] wherein the proximal end assembly of the check valve assembly is further configured such that as the proximal end assembly of the check valve assembly is threadably coupled to the male threads defined on the exterior surface of the open and threaded distal end portion of the elongate tube body, the seal coupler is driven into a sealed position within the selectively sealed interior cavity of the elongate tube body to affect complete hermeticity.</u>	“As one skilled in the art will appreciate, as the proximal end assembly of the check valve assembly 100 is threadably coupled to the distal end 73 of the elongate tube body, the seal coupler 90 is driven into a sealed position therein the second interior cavity 70 to affect complete hermeticity.” Ex.1002, 262, [0054]. This is shown in Figs. 3, 5-6.	“As one skilled in the art will appreciate, as the proximal end assembly of the check valve assembly 100 is threadably coupled to the distal end 73 of the elongate body, the seal coupler 90 is driven into a sealed position therein the second interior cavity 70 to affect complete hermeticity.” Ex.2004, [0049]. This is shown in Figs. 3, 5-6.
<u>[26.6] wherein the interior chamber of the check valve assembly extends to a distal end of the check valve assembly, and wherein the check valve assembly further defines a plurality of ports that extend from an exterior surface of the check valve assembly and are in fluid communication with the interior chamber of the check valve assembly, and wherein the plurality of</u>	“The core barrel head assembly of Claim 12, wherein the interior chamber of the check valve assembly extends to a distal end of the check valve assembly, and wherein the check valve assembly further defines at least one port that extends from an exterior surface of the check valve assembly and is in fluid communication with the interior chamber of the	“In another aspect, the interior chamber 110 of the check valve assembly extends to a distal end 104 of the check valve assembly. In this aspect, at least one port 106 is provided that extends from the exterior surface of the check valve assembly and is in fluid communication with the interior chamber of the check valve assembly. In one aspect, the at least one port 106 can comprise a plurality of ports. In this aspect, it is contemplated that the

<u>ports are angularly spaced an unequal number of degrees apart, and</u>	check valve assembly.” Ex.1002, 285, claim 14. “In another aspect, the interior chamber 110 of the check valve assembly extends to a distal end 104 of the check valve assembly. In this aspect, at least one port 106 is provided that extends from the exterior surface of the check valve assembly and is in fluid communication with the interior chamber of the check valve assembly. In one aspect, the at least one port 106 can comprise a plurality of ports. In this aspect, it is contemplated that the plurality of ports can be angularly spaced an equal or an unequal number of degrees apart.” Ex.1002, 261, [0056]. The ports are shown in Figs. 3-6.	plurality of ports can be angularly spaced an equal or an unequal number of degrees apart.” Ex.2004, [0051]. The ports are shown in Figs. 3-6.
<u>[26.7] wherein the interior chamber of the check valve assembly is sized and shaped to allow the check ball to selectively move axially between an open position, in which the check ball is spaced proximally away from</u>	“The core barrel head assembly of Claim 15, wherein the interior chamber is sized and shaped to allow the check ball to selectively move axially between an open position, in which the check ball is spaced proximally away from the	“One skilled in the art will appreciate that the interior chamber 110 of the check valve assembly 100 can be sized and shaped to allow the ball to selectively move axially between an open position, in which the ball is spaced proximally away from the surface of the

<u>the surface of the tapered seat so that pressurized fluid can move through the distal end of the check valve assembly and subsequently through the interior chamber to exit out of the at least one port, and a closed position, in which the check ball is pressurized against the surface of the tapered seat so that pressurized fluid cannot move through the check valve assembly;</u>	surface of the tapered seat so that pressurized fluid can move through the distal end of the check valve assembly and subsequently through the interior chamber to exit out of the at least one port, and a closed position, in which the check ball is pressurized against the surface of the tapered seat so that pressurized fluid cannot move through the check valve assembly.” Ex.1002, 285, claim 16.	tapered seat so that pressurized fluid can move through the distal end of the check valve assembly and subsequently through the interior chamber to exit out of the at least one port, and a closed position, in which the ball is pressurized against the surface of the tapered seat so that pressurized fluid cannot move through the check valve assembly.” Ex.2004, [0052].
	“One skilled in the art will appreciate that the interior chamber 110 of the check valve assembly 100 can be sized and shaped to allow the ball to selectively move axially between an open position, in which the ball is spaced proximally away from the surface of the tapered seat so that pressurized fluid can move through the distal end of the check valve assembly and subsequently through the interior chamber to exit out of the at least one port, and a closed position, in which the ball is pressurized against the surface of the tapered seat so that pressurized fluid	

	cannot move through the check valve assembly.” Ex.1002, 263, [0057].	
[26.8] <i>a window that extends from the exterior surface of the elongate tube body into optical communication with the selectively sealed interior cavity of the elongate tube body proximate the closed proximal end of the selectively sealed interior cavity;</i>	“In one aspect, as shown, a plurality of windows 74 can be defined in the elongate tube body that extend from the exterior surface 61 of the elongate tube body into the second interior chamber 70 proximate the closed proximal end 72 of the second interior chamber.” Ex.1002, 260, [0047]. “In one exemplary aspect, light from the plurality of light emitters 88 (e.g. LEDs, and the like) passes through or can be observed through the plurality of windows 74.” Ex.1002, 261, [0050]. The window is shown in Figs. 3-7. See also Ex.1002, 283, claim 1.	“In one aspect, as shown, a plurality of windows 74 can be defined in the elongate body that extend from the exterior surface 61 of the elongate body into the second interior chamber 70 proximate the closed proximal end 72 of the second interior chamber.” Ex.2004, [0042]. “In one exemplary aspect, light from the plurality of light emitters 88 (e.g. LEDs, and the like) passes through or can be observed through the plurality of windows 74.” Ex.2004, [0045]. The window is shown in Figs. 3-7.
[26.9] <i>at least one electronic instrument that is configured to obtain core orientation data, wherein the at least one electronic instrument comprises a memory, a timer, an LCD display at one end,</i>	“In one aspect, and referring to Figures 1-7, the core barrel head assembly 30 can comprise at least one electronic instrument 40 that is configured to obtain orientation data.... In one aspect, at least one	“In one aspect, and referring to Figures 1-7, the core barrel head assembly 30 can comprise at least one electronic instrument 40 that is configured to obtain orientation data.... In one aspect, at least one electronic instrument 40 can comprise

<i>and at least one digital and/or electro-mechanical sensor in a core orientation data recording tool; [[and]]</i>	electronic instrument 40 can comprise at least one digital and/or electro-mechanical sensors 42...in a core orientation data recording tool...” Ex.1002, 259, [0042]. “[T]he at least one electronic instrument 40 can comprise an LCD display 41 at one end....the at least one electronic instrument 40 can comprise...a memory 45, a timer 47 and the aforementioned LCD display 41.” Ex.1002, 270-271, [0084]. The electronic instrument is shown in Figs. 3-6. <i>See also</i> Ex.1002, 283; claim 1; 259, [0043].	at least one digital and/or electro-mechanical sensors...in a core orientation data recording tool...” Ex.2004, [0037]. “[T]he at least one electronic instrument 40 can comprise an LCD display 41 at one end....the at least one electronic instrument 40 can comprise...a memory 45, a timer 47 and the aforementioned LCD display 41.” Ex.2004, [0076]. The electronic instrument is shown in Figs. 3-6. <i>See also</i> Ex.2004, claims 1-2.
[26.10] <i>a transmitter configured to transmit core orientation data;</i>	“As one skilled in the art will contemplate, the core barrel head assembly can comprise...communication means to receive and/or transmit orientation data.” Ex.1002, 258, [0041]. “In this aspect, communication means of the core barrel head assembly comprises a transmitter...” Ex.1002, 280, [00112].	“In one aspect, and referring to Figures 1-7, the core barrel head assembly 30 can comprise...communication means to receive and/or transmit orientation data.” Ex.2004, [0037]. “In this aspect, communication means of the core barrel head assembly comprises a transmitter...” Ex.2004, [0078].

	See also Ex.1002, 283, claim 1; 263, [0059]; 281, [00116].	See also Ex.2004, claims 1-2, [0082].
<u>[26.11] an orientation indicator module disposed in the closed proximal end of the selectively sealed interior cavity, wherein the orientation indicator module is disposed in operative contact with the at least one electronic instrument when the proximal end assembly of the check valve assembly is threadably coupled to the open and threaded distal end portion of the elongate tube body; and</u>	"The core barrel head assembly of Claim 1, further comprising an orientation indicator module comprising a light emitter." Ex.1002, 283, claim 4. "In a further aspect, an orientation indicator module 80 can be provided..." Ex.1002, 260, [0047]. "...because the orientation indicator module 90 is sealingly disposed in the proximal end of the second interior chamber 7, the least one electronic instrument 40...is disposed in operative contact with the orientation indicator module...as the proximal end assembly of the check valve assembly is threadably coupled to the distal 73 end of the elongate tube body..." Ex.1002, 262, [0055]. The orientation indicator module is shown in Figs. 3-6.	"In a further aspect, an orientation indicator module 80 can be provided..." Ex.2004, [0042]. "...because the orientation indicator module 90 is sealingly disposed in the proximal end of the second interior chamber 70, the least one electronic instrument 40...is disposed in operative contact with the orientation indicator module...as the proximal end assembly of the check valve assembly is threadably coupled to the distal 73 end of the elongate body..." Ex.2004, [0050]. The orientation indicator module is shown in Figs. 3-6. See also Ex.2004, [0043]-[0044], [0071].

	<i>See also</i> Ex.1002, 260-261, [0048]-[0049].	
<u>[26.12] a power source disposed within the selectively sealed interior cavity, wherein the power source is operatively electrically coupled to the at least one electronic instrument and comprises a rechargeable battery.</u>	“In one aspect, and referring to Figures 1-7, the core barrel head assembly 30 can comprise...a[n] operatively electrically coupled power source 50...” Ex.1002, 259, [0042]. “The second interior cavity 70 can be sized to hermetically enclose...the power source 50.... The at least one electronic instrument 40 is operatively electrically coupled to the power source 50, which can comprise any conventional power source, such as, for example...a rechargeable battery...” Ex.1002, 260, [0046]. The power source is shown in Figs. 3-6. <i>See also</i> Ex.1002, 265, [0065].	“In one aspect, and referring to Figures 1-7, the core barrel head assembly 30 can comprise...a[n] operatively electrically coupled power source 50...” Ex.2004, [0037]. “The second interior cavity 70 can be sized to hermetically enclose...the power source 50.... The at least one electronic instrument 40 is operatively electrically coupled to the power source 50, which can comprise any conventional power source, such as, for example...a rechargeable battery...” Ex.2004, [0041]. The power source is shown in Figs. 3-6.
<u>[26.13] wherein the seal coupler is disposed in contact with the power source when the proximal end assembly of the check valve assembly is threadably</u>	“...the seal coupler 90 is disposed in contact with...the power source 50...as the proximal end assembly of the check valve assembly is threadably coupled to the	“...the seal coupler 90 is disposed in contact with...the power source 50...as the proximal end assembly of the check valve assembly is threadably coupled to the distal 73 end

<u><i>coupled to the open and threaded distal end portion of the elongate tube body, and</i></u>	distal 73 end of the elongate tube body..." Ex.1002, 262, [0055]. As shown in Figs. 4-6.	of the elongate body..." Ex.2004, [0050]. As shown in Figs. 4-6.
<u><i>[26.14] wherein the selectively sealed interior cavity is sized and shaped to enclose the at least one electronic instrument, the orientation indicator module, and the power source.</i></u>	"In another aspect, the second interior cavity 70 can be sized to hermetically enclose the least one electronic instrument 40 that is configured to obtain orientation data and the power source 50." Ex.1002, 260, [0046]. "...the orientation indicator module 90 is sealingly disposed in the proximal end of the second interior chamber 70..." Ex.1002, 262, [0055]. As shown in Figs. 3 and 5-6. <i>See also</i> Ex.1002, 260, [0047]; 261, [0049].	"In another aspect, the second interior cavity 70 can be sized to hermetically enclose the least one electronic instrument 40 that is configured to obtain orientation data and the power source 50." Ex.2004, [0041]. "...the orientation indicator module 90 is sealingly disposed in the proximal end of the second interior chamber 70..." Ex.2004, [0050]. As shown in Figs. 3 and 5-6. <i>See also</i> Ex.2004, [0042], [0044].

In the PG, the Board indicated "Patent Owner has set forth written description support for the proposed amendments, with the exception of Limitation 26.13." PG, 5. The Board asserts that the '026 Application and the Provisional Application "disclose that the seal coupler is disposed in 'contact' with...the power source 50," but "do not disclose the seal coupler is in '*operative* contact with the power source.'" PG, 8 (emphasis in original). Thus, in the Revised MTA,

Limitation 26.13 has been changed to recite “*wherein the seal coupler is disposed in contact with the power source...*,” removing the word “*operative.*” Thus, PO asserts that revised substitute claim 26 does not present new matter.

V. THE SUBSTITUTE CLAIM IS PATENTABLE OVER BEACH-127 AND WIESE.

“A motion to amend may be denied where... [t]he amendment does not respond to a ground of unpatentability involved in the trial.” 37 C.F.R. § 42.121(a)(2)(i). Here, Petitioner asserts that claim 1 is unpatentable over Beach-127 (Ex.1003) and Wiese (Ex.1004) (Ground 1). The substitute claim satisfies this requirement at least because it adds features that avoid the alleged teachings of Beach-127 and Wiese. *Lectrosonics*, 7 (“a proposed substitute claim adding a novel and nonobvious feature or combination to avoid the prior art in an instituted ground of unpatentability” meets the requirements of § 42.121(a)(2)(i)).

“[T]he burden of persuasion ordinarily will lie with the petitioner to show that any proposed substitute claims are unpatentable by a preponderance of the evidence.” *Lectrosonics*, 4. Nevertheless, an explanation as to how each of the

claim amendments further distinguish over Beach-127 and Wiese is provided below.¹

First, Beach-127 in combination with Wiese does not disclose or suggest “an *integral elongate tube body*,” as recited in limitation [26.1]. Instead, Beach-127 explains that “[t]he tool 10 comprises an electronic core orientation device or system 20 housed within a body 22 that is **coupled to and between the core tube cap 18 and the adaptor 16.**” Ex.1003, 12. Thus, as shown in annotated Fig. 2 below, the tool 10 is formed of three separate pieces: the core orientation tool (in green), the core tube cap 18 (in blue), and the adaptor 16 (in orange).

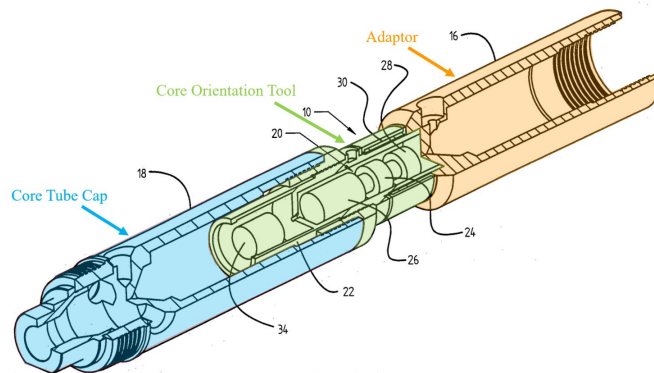


Figure 2

Beach-127, Fig. 2 (annotated)

In this regard, Petitioner's expert explained that the cap 18 may be threaded on and threaded off tool 10. *See* Ex.2005 (Rodgers Depo Tr.), 33:8-15, 34:19-35:19.

Additionally, Wiese does not teach an integral elongate tube body.

¹ The Board preliminarily agreed that “[a]t least one amendment presented is responsive to a ground of unpatentability.” PG, 4.

Second, Beach-127 does not teach “*an open and threaded distal end portion, wherein the selectively sealed interior cavity extends distally to the open and threaded distal end portion of the core barrel head assembly, and wherein the open and threaded distal end portion includes male threads defined on the exterior surface,*” as recited in limitation [26.1.5]. As shown in annotated Fig. 2 of Beach-127 below, the inner cavity (in red) does not extend to the open distal end of the core tube cap 18.

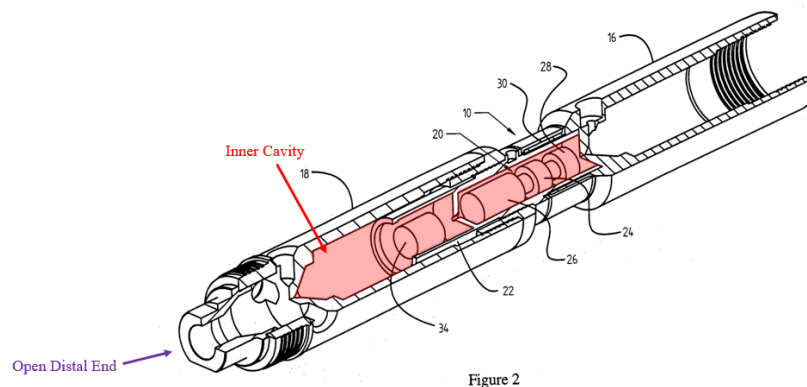


Figure 2
Beach-127, Fig. 2 (annotated)

Petitioner's expert confirmed that Beach-127's inner cavity (in red) is closed and not open. *See* Ex.2005, 35:20-37:14. Moreover, Wiese does not teach a distal end portion.

Third, Beach-127 does not include any teaching or suggestion of the following recited structural elements of substitute claim 26: “*a seal coupler,*” “*an O-ring seal,*” and “*a check valve assembly*”. Accordingly, Beach-127 also does not teach any of the limitations associated with the seal coupler, the O-ring seal, or the

check valve assembly (limitations [26.2]-[26.7]). Moreover, during prosecution of U.S. Patent No. 11,466,529 (which claims priority to the '013 Patent, the "Child Patent"), the examiner allowed the pending claims over Beach-127 in response to amendments reciting "a seal coupler" and "a check valve assembly." *See* Ex.1013, 28, 63. Wiese similarly does not teach or suggest a seal coupler, an O-ring seal, or a check valve assembly.

Fourth, Beach-127 in view of Wiese does not teach or suggest "*the at least one electronic instrument comprises a memory, a timer, **an LCD display at one end**, and at least one digital and/or electro-mechanical sensor in a core orientation data recording tool,*" as required by limitation [26.9]. Neither Beach-127 nor Wiese disclose an electronic instrument having an LCD display at all and, thus, neither discloses an LCD display at one end of the electronic instrument. Therefore, Beach-127 and Wiese do not teach an electronic instrument with the combination of a memory, a timer, an LCD display at one end, and a digital or electro-mechanical sensor.

Fifth, Beach-127 in combination with Wiese does not disclose or suggest "*an orientation indicator module disposed in the closed proximal end of the selectively sealed interior cavity, wherein the orientation indicator module is disposed in operative contact with the at least one electronic instrument when the proximal end assembly of the check valve assembly is threadably coupled to the*

open and threaded distal end portion of the elongate tube body,” as recited in limitation [26.11]. There is no disclosure or suggestion in Beach-127 of an orientation indicator module. Moreover, as described above, Beach-127 does not disclose or suggest a check valve assembly. Thus, Beach-127 does not teach limitation [26.11]. Wiese similarly does not disclose or suggest an orientation indicator module or a check valve assembly.

Sixth, Beach-127 in view of Wiese does not teach “*a power source disposed within the selectively sealed interior cavity, wherein the power source is operatively electrically coupled to the at least one electronic instrument and comprises a rechargeable battery,*” as required by limitation [26.12]. Beach-127 is silent with regards to a power source. Wiese explains that “the schematic tool 10 includes one main readout connector 12 for power and communication” and “that wireless arrangements and methods as discussed hereunder could also be employed to provide power.” Ex.1004, [0011]. However, Wiese does not disclose or suggest that a power source is disposed within a selectively sealed interior cavity, that the power source is operatively electrically coupled to an electronic instrument, or that the power source is a rechargeable battery.

Seventh, Beach-127 in combination with Wiese does not disclose or suggest “*the seal coupler is disposed in contact with the power source when the proximal end assembly of the check valve assembly is threadably coupled to the open and*

threaded distal end portion of the elongate tube body,” as required by limitation [26.13]. As explained above, there is no disclosure or suggestion in either Beach-127 or Wiese of a seal coupler or a check valve assembly. Thus, Beach-127 and Wiese do not disclose limitation [26.13].

Eighth, Beach-127 and Wiese do not teach “*wherein the selectively sealed interior cavity is sized and shaped to enclose the at least one electronic instrument, the orientation indicator module, and the power source,*” as recited in limitation [26.14]. As explained above, neither Beach-127 nor Wiese disclose or suggest an orientation indicator module or the recited power source. Thus, Beach-127 and Wiese do not teach that a selectively sealed interior cavity is sized and shaped to enclose the combination of the electronic instrument, orientation indicator module, and power source as required.

For at least these reasons, substitute claim 26 is patentable over Beach-127 in view of Wiese and this Revised MTA is responsive to the Petition's Ground 1.

VI. CONCLUSION

For the foregoing reasons, Patent Owner respectfully requests that the Board grant this Revised MTA should claim 1 of the '013 Patent be found unpatentable.

Respectfully submitted,

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Appendix A

CLAIM APPENDIX

26. *(Substitute for Claim 1, if found unpatentable)* A core barrel head assembly ~~having an exterior surface and~~ comprising:

an integral elongate tube body having an exterior surface and comprising:

a first interior cavity defined within the elongate tube body;

a selectively sealed interior cavity defined within the elongate tube body and spaced distally from the first interior cavity, ~~[[and]]~~ the selectively sealed interior cavity having a closed proximal end;

a threaded proximal end portion for coupling to a wire line retrieval portion of a head assembly;

a base portion, wherein the first interior cavity extends distally from the threaded proximal end portion to the base portion; and

an open and threaded distal end portion, wherein the selectively sealed interior cavity extends distally to the open and threaded distal end portion of the core barrel head assembly, and wherein the open and threaded distal end portion includes male threads defined on the exterior surface;

a seal coupler configured to be sealingly received in the open and threaded distal end portion of the elongate tube body;

an O-ring seal for preventing any pressurized fluid from entering the selectively sealed interior cavity of the elongate tube body, wherein the O-ring seal

is mounted on a portion of the seal coupler and is configured to seal between a portion of the seal coupler and a portion of an interior surface of the open and threaded distal end portion of the elongate tube body;

a check valve assembly configured to affect a hermetical seal of the selectively sealed interior cavity of the elongate tube body and to provide fluid control for wire line operation, wherein the check valve assembly comprises a check ball, a coupled proximal end assembly, and a distally tapered seat that defines an interior chamber for operative receipt of the check ball, wherein the check ball is sized to selectively block the distally tapered seat,

wherein the proximal end assembly of the check valve assembly defines a female threaded coupling that is configured to be threadably coupled to the male threads defined on the exterior surface of the open and threaded distal end portion of the elongate tube body, wherein the proximal end assembly of the check valve assembly is further configured such that as the proximal end assembly of the check valve assembly is threadably coupled to the male threads defined on the exterior surface of the open and threaded distal end portion of the elongate tube body, the seal coupler is driven into a sealed position within the selectively sealed interior cavity of the elongate tube body to affect complete hermeticity,

wherein the interior chamber of the check valve assembly extends to a distal end of the check valve assembly, and wherein the check valve assembly further

defines a plurality of ports that extend from an exterior surface of the check valve assembly and are in fluid communication with the interior chamber of the check valve assembly, and wherein the plurality of ports are angularly spaced an unequal number of degrees apart, and

wherein the interior chamber of the check valve assembly is sized and shaped to allow the check ball to selectively move axially between an open position, in which the check ball is spaced proximally away from the surface of the tapered seat so that pressurized fluid can move through the distal end of the check valve assembly and subsequently through the interior chamber to exit out of the at least one port, and a closed position, in which the check ball is pressurized against the surface of the tapered seat so that pressurized fluid cannot move through the check valve assembly;

a window that extends from the exterior surface of the elongate tube body into optical communication with the selectively sealed interior cavity of the elongate tube body proximate the closed proximal end of the selectively sealed interior cavity;

at least one electronic instrument that is configured to obtain core orientation data, wherein the at least one electronic instrument comprises a memory, a timer, an LCD display at one end, and at least one digital and/or electro-mechanical sensor in a core orientation data recording tool; [[and]]

a transmitter configured to transmit core orientation data;

an orientation indicator module disposed in the closed proximal end of the selectively sealed interior cavity, wherein the orientation indicator module is disposed in operative contact with the at least one electronic instrument when the proximal end assembly of the check valve assembly is threadably coupled to the open and threaded distal end portion of the elongate tube body; and

a power source disposed within the selectively sealed interior cavity, wherein the power source is operatively electrically coupled to the at least one electronic instrument and comprises a rechargeable battery,

wherein the seal coupler is disposed in contact with the power source when the proximal end assembly of the check valve assembly is threadably coupled to the open and threaded distal end portion of the elongate tube body, and

wherein the selectively sealed interior cavity is sized and shaped to enclose the at least one electronic instrument, the orientation indicator module, and the power source.

Certificate of Service

The undersigned certifies that, in accordance with 37 C.F.R. § 42.6(e),
service was made on Petitioner as detailed below.

Date of service April 23, 2024

Manner of service Electronic Service by E-mail: sweidenfeller@cov.com;
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Documents served **Patent Owner's Revised Contingent Motion to Amend;
Exhibit List**

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