

Patent Office's Evaluation of "Beach-127" Against the Challenged Claims of the '013 Patent

I. Claim 1

'013 Patent, Claim 1	Patent Office's Evaluation of Beach-127	Patent Owner's Response to Office's Evaluation of Beach-127
1[pre] A core barrel head assembly having an exterior surface and comprising:	Examiner repeatedly found that Beach-127 "discloses a core barrel head assembly having an exterior surface." Ex. 1013 ('529 File History) at 192 (October 27, 2021 Office Action at 4); Ex. 1011 ('463 File History) at 54-55 (March 14, 2019 Office Action at 3-4).	Patent Owner repeatedly acknowledged, and did not dispute, Examiner's identification of this limitation in Beach-127. Ex. 1013 ('529 File History) at 77 (April 27, 2022 Response at 12); Ex. 1011 ('463 File History) at 36 (June 12, 2019 Response at 8).
1[a] a first interior cavity;	Examiner repeatedly found that Beach-127 discloses "a first interior cavity (16)." Ex. 1011 ('463 File History) at 54-55 (March 14, 2019 Office Action at 3-4) (emphasis in original); Ex. 1013 ('529 File History) at 192 (October 27, 2021 Office Action at 4) (emphasis in original).	Patent Owner repeatedly acknowledged, and did not dispute, Examiner's identification of this limitation in Beach-127. Ex. 1011 ('463 File History) at 36 (June 12, 2019 Response at 8); Ex. 1013 ('529 File History) at 77 (April 27, 2022 Response at 12).
1[b] a selectively sealed interior cavity spaced distally from the first interior cavity	Examiner found that Beach-127 discloses "a selectively interior cavity (18) spaced distally from the first interior cavity."	Patent Owner acknowledged, and did not dispute, Examiner's identification of this limitation in Beach-127.

and having a closed proximal end;	Ex. 1011 ('463 File History) at 54-55 (March 14, 2019 Office Action at 3-4) (emphasis in original).	Ex. 1011 ('463 File History) at 36 (June 12, 2019 Response at 8).
1[c] a threaded proximal end portion for coupling to a wire line retrieval portion of a head assembly;	Examiner repeatedly found that Beach-127 discloses “a threaded proximal end for coupling to a wireline retrieval portion of a head assembly.” Ex. 1011 ('463 File History) at 54-55 (March 14, 2019 Office Action at 3-4); Ex. 1013 ('529 File History) at 192 (October 27, 2021 Office Action at 4).	Patent Owner repeatedly acknowledged, and did not dispute, Examiner’s identification of this limitation in Beach-127. Ex. 1011 ('463 File History) at 36 (June 12, 2019 Response at 8); Ex. 1013 ('529 File History) at 77 (April 27, 2022 Response at 12).
1[d] a base portion, wherein the first interior cavity extends distally from the threaded proximal end portion to the base portion;	Examiner found that Beach-127 discloses that “the first interior cavity extends distally from the threaded proximal end to a base portion (illustrated in Fig. 2[]). ” Ex. 1011 ('463 File History) at 54-55 (March 14, 2019 Office Action at 3-4) (emphasis in original).	Patent Owner acknowledged, and did not dispute, Examiner’s identification of this limitation in Beach-127. Ex. 1011 ('463 File History) at 36 (June 12, 2019 Response at 8).
1[e] a window that extends from the exterior surface into optical communication with the sealed interior cavity proximate the closed proximal	Examiner found that Beach-127 discloses “a window (illustrated in Fig. 2[]) that extends from the exterior surface into optical communication with the sealed interior cavity.” Further, Examiner’s Fig. 2 annotation located	Patent Owner acknowledged, and did not dispute, Examiner’s identification of this limitation in Beach-127.

end of the sealed interior cavity;	the “window” as being proximate the “closed proximal end” of the “sealed interior cavity,” which is “adjacent [the] base portion.” Ex. 1013 (’529 File History) at 192 (October 27, 2021 Office Action at 4) (emphasis in original).	Ex. 1013 (’529 File History) at 77 (April 27, 2022 Response at 12).
1[f] at least one electronic instrument that is configured to obtain orientation data,	Examiner repeatedly found that Beach-127 discloses “at least one electronic instrument (20) that is configured to obtain orientation data (pg. 11, lines 33-36).” Ex. 1013 (’529 File History) at 192 (October 27, 2021 Office Action at 4) (emphasis in original); <i>see also</i> Ex. 1011 (’463 File History) at 55 (March 14, 2019 Office Action at 4).	Patent Owner repeatedly acknowledged, and did not dispute, Examiner’s identification of this limitation in Beach-127. Ex. 1013 (’529 File History) at 77 (April 27, 2022 Response at 12); Ex. 1011 (’463 File History) at 36 (June 12, 2019 Response at 8).
1[g] wherein the at least one electronic instrument comprises at least one digital and/or electro-mechanical sensor in a core orientation data recording tool;	Examiner repeatedly found that Beach-127 discloses the requirement that “the at least one electronic instrument comprises at least one digital and/or electro-mechanical sensor in a core orientation data recording tool (pg. 12, lines 7-21).”	Patent Owner repeatedly acknowledged, and did not dispute, Examiner’s identification of this limitation in Beach-127. Ex. 1013 (’529 File History) at 77 (April 27, 2022 Response at 12); Ex. 1011 (’463 File History) at 36 (June 12, 2019 Response at 8).

	Ex. 1013 ('529 File History) at 192 (October 27, 2021 Office Action at 4) (emphasis in original); <i>see also</i> Ex. 1011 ('463 File History) at 55 (March 14, 2019 Office Action at 4).	
1[h] a transmitter configured to transmit core orientation data,	Examiner repeatedly found that Beach-127 discloses “a transmitter (28, 30) configured to transmit core orientation data (pg. 12, lines 25-28). ” Ex. 1013 ('529 File History) at 192 (October 27, 2021 Office Action at 4) (emphasis in original); <i>see also</i> Ex. 1011 ('463 File History) at 55 (March 14, 2019 Office Action at 4).	Patent Owner repeatedly acknowledged, and did not dispute, Examiner’s identification of this limitation in Beach-127. Ex. 1013 ('529 File History) at 77 (April 27, 2022 Response at 12); Ex. 1011('463 File History) at 36 (June 12, 2019 Response at 8).
1[i] wherein the sealed interior cavity is sized and shaped to enclose the at least one electronic instrument.	Examiner found that Beach-127 discloses that “the sealed interior cavity is sized and shaped to enclose the at least one electronic instrument (Fig. 2). ” Ex. 1013 ('529 File History) at 192-93 (October 27, 2021 Office Action at 4-5) (emphasis in original).	Patent Owner acknowledged, and did not dispute, Examiner’s identification of this limitation in Beach-127. Ex. 1013 ('529 File History) at 77 (April 27, 2022 Response at 12).

II. Claim 2

'013 Patent, Claim 2	Patent Office's Evaluation of Beach-127	Patent Owner's Response to Office's Evaluation of Beach-127
2[a] "The core barrel head assembly of claim 1, further comprising: a port positioned proximate the base portion and extending from the exterior surface into fluid communication with the first interior cavity; and"	Examiner found that Beach-127 discloses "a port (illustrated in Fig. 2 above) positioned proximate the base portion and extending from the exterior surface . . . into fluid communication with the first interior cavity." Ex. 1011 ('463 File History) at 55 (March 14, 2019 Office Action at 4) (emphasis in original).	Patent Owner acknowledged, and did not dispute, Examiner's identification of this limitation in Beach-127. Ex. 1011 ('463 File History) at 36 (June 12, 2019 Response at 8).
2[b] "a grease fitting mounted in the port to allow for selective passage of grease or other lubricant to and from the exterior surface of the barrel head assembly into communication with the first interior cavity."	N/A	N/A

III. Claim 3

'013 Patent, Claim 3	Patent Office's Evaluation of Beach-127	Patent Owner's Response to Office's Evaluation of Beach-127
"The core barrel head assembly of claim 1, wherein the sealed interior cavity is sized and shaped to hermetically enclose the transmitter."	Examiner found that Beach-127 discloses that the "sealed interior cavity (18) is sized and shaped to hermetically enclose the communication means (28) to receive and/or transmit orientation data (Fig. 2)." Ex. 1011 ('463 File History) at 56 (March 14, 2019 Office Action at 5) (emphases in original).	Patent Owner acknowledged, and did not dispute, Examiner's identification of this limitation in Beach-127. Ex. 1011 ('463 File History) at 36 (June 12, 2019 Response at 8).

IV. Claim 19

'013 Patent, Claim 19	Patent Office's Evaluation of Beach-127	Patent Owner's Response to Office's Evaluation of Beach-127
"The core barrel head assembly of claim 1, wherein the exterior surface defines a plurality of female planar stops."	Examiner found that Beach-127 discloses that the "exterior surface of the elongate tube body (18, 16) defines a plurality of female planar stops proximate the mid-body portion (Fig. 2 above)." Ex. 1011 ('463 File History) at 56 (March 14, 2019 Office Action at 5) (emphases in original).	Patent Owner acknowledged, and did not dispute, Examiner's identification of this limitation in Beach-127. Ex. 1011 ('463 File History) at 36 (June 12, 2019 Response at 8).

v. Claim 20

'013 Patent, Claim 20	Patent Office's Evaluation of Beach-127	Patent Owner's Response to Office's Evaluation of Beach-127
"The core barrel head assembly of claim 1, wherein the at least one electronic instrument is programmed to obtain orientation data when the at least one electronic instrument senses no relative movement of the at least one electronic instrument."	Examiner found that Beach-127 discloses that "the at least one electronic instrument (34) is programmed to obtain orientation data when the at least one electronic instrument senses no relative movement of the at least one electronic instrument[] (pg. 17, lines 4-12)." Ex. 1011 ('463 File History) at 56 (March 14, 2019 Office Action at 5) (emphases in original).	Patent Owner acknowledged, and did not dispute, Examiner's identification of this limitation in Beach-127. Ex. 1011 ('463 File History) at 36 (June 12, 2019 Response at 8).

VI. Claim 21

'013 Patent, Claim 21	Patent Office's Evaluation of Beach-127	Patent Owner's Response to Office's Evaluation of Beach-127
21[a] "The core barrel head assembly of claim 20, wherein the at least one electronic instrument is programmed to obtain orientation data when the at least one electronic instrument senses no vibrations,"	Examiner found that Beach-127 discloses that "the at least one electronic instrument (34) is programmed to obtain orientation data when the at least one electronic instrument senses no vibrations." The Examiner further explained, referring to Beach-127 at 17:4-12, that "[t]he gyroscope 34 tracks changes in orientation of the tool after drilling has stopped meaning there is no movement or vibrations. Vibrations would occur during drilling." Ex. 1011 ('463 File History) at 57 (March 14, 2019 Office Action at 6) (emphasis in original).	Patent Owner acknowledged, and did not dispute, Examiner's identification of this limitation in Beach-127. Ex. 1011 ('463 File History) at 36 (June 12, 2019 Response at 8).
21[b] "and wherein the at least one electronic instrument is programmed to not obtain orientation data when the at least one electronic instrument determines that the core barrel head assembly is in motion while descending down or	Examiner found that Beach-127 discloses that "the at least one electronic instrument (34) is programmed to not obtain orientation data when the at least one electronic instrument determines that the core barrel head assembly is in motion while descending down or ascending up the	Patent Owner acknowledged, and did not dispute, Examiner's identification of this limitation in Beach-127. Ex. 1011 ('463 File History) at 36 (June 12, 2019 Response at 8).

ascending up the hole and during drilling.”	hole and during drilling (pg. 17, lines 4-7).” Ex. 1011 ('463 File History) at 57 (March 14, 2019 Office Action at 6) (emphasis in original).	
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VII. Claim 22

'013 Patent, Claim 22	Patent Office's Evaluation of Beach-127	Patent Owner's Response to Office's Evaluation of Beach-127
"The core barrel head assembly of claim 1, wherein the at least one electronic instrument is programmed to obtain orientation data based on a predetermined time interval scheme,"	Examiner found that Beach-127 discloses that "the at least one electronic instrument is programmed to obtain orientation data based on a predetermined time interval scheme. (pg. 19, lines 11-23)." Ex. 1011 ('463 File History) at 57 (March 14, 2019 Office Action at 6) (emphasis in original).	Patent Owner acknowledged, and did not dispute, Examiner's identification of this limitation in Beach-127. Ex. 1011 ('463 File History) at 36 (June 12, 2019 Response at 8).