

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

PETROLEUM GEO-SERVICES INC.,
Petitioner,

v.

WESTERNGECO LLC,
Patent Owner.

Case IPR2014-00688
Patent 7,080,607 B2

Before BRYAN F. MOORE, SCOTT A. DANIELS, and
BEVERLY M. BUNTING, *Administrative Patent Judges*.

DANIELS, *Administrative Patent Judge*.

DECISION
Decision on Institution of *Inter Partes* Review
37 C.F.R. § 42.108

I. INTRODUCTION

A. Background

Petroleum Geo-Services Inc. (“Petitioner”) filed a Petition to institute an *inter partes* review of claims 1 and 15 of U.S. Patent No. 7,080,607 B2 (“the ’607 patent”).¹ Paper 1 (“Pet.”). WesternGeco LLC (“Patent Owner”) timely filed a Preliminary Response. Paper 26 (“Prelim. Resp.”).

We have authority to determine whether to institute an *inter partes* review under 35 U.S.C. § 314; 37 C.F.R. § 42.4(a). Upon consideration of the Petition and the Preliminary Response, we determine that Petitioner has established a reasonable likelihood of prevailing on the claims challenged in the Petition. Accordingly, we institute an *inter partes* review for claims 1 and 15 of the ’607 patent.

B. Additional Proceedings

Petitioner states that related lawsuits involving the ’607 patent presently asserted against Petitioner are *WesternGeco LLC v. Petroleum Geo-Services, Inc.*, 4:13-cv-02725, in the Southern District of Texas and *WesternGeco LLC v. ION Geophysical Corp.*, 4:09-cv-01827 (the “ION lawsuit”), also in the Southern District of Texas. Pet. 8.

Petitioner also has concurrently filed three additional petitions challenging the patentability of claims 1, 2, 6, 18, 19, and 23 of U.S. Patent No. 7,293,520 B2 (“the ’520 patent”); claims 1 and 15 of U.S. Patent No. 7,162,967 B2 (“the ’967 patent”); and claim 14 of U.S. Patent No. 6,691,038

¹ The Petition was initially accorded the filing date of April 23, 2014. Paper 6. Following submission of an updated Mandatory Notice (Paper 18) on August 5, 2014, including additional real-parties-in-interest, we exercised our discretion under 37 C.F.R. § 42.5(c), changing the filing date of the Petition to August 5, 2014. Paper 22.

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B2 (“the ’038 patent”).² *See* IPR2014-00689; IPR2014-00678; IPR2014-00687.

C. The ’607 Patent

The ’607 patent (Ex. 1001), titled “Seismic Data Acquisition Equipment Control System,” generally relates to a method and apparatus for improving marine seismic survey techniques by more effectively controlling the movement and positioning of marine seismic streamers towed in an array behind a boat. Ex. 1001, col. 1, ll. 16–24. As illustrated in Figure 1 of the ’607 patent reproduced below, labeled prior art, a seismic source, for example air gun 14, is towed by boat 10 producing acoustic signals, which are reflected off the earth below. *Id.* The reflected signals are received by hydrophones (no reference number) attached to streamers 12, and the signals “digitized and processed to build up a representation of the subsurface geology.” *Id.* at col. 1, ll. 31–33.

² The ’520, ’607, and ’967 patents each issued as a continuation of application No. 09/787,723, filed July 2, 2001, now U.S. Patent No. 6,932,017, which was in turn a 35 U.S.C. § 371 national stage filing from Patent Cooperation Treaty application number PCT/IB99/01590, filed September 28, 1999, claiming foreign priority under 35 U.S.C. § 119 from Great Britain patent application number 9821277.3, filed October 1, 1998. *See* Ex. 1001, col. 1, ll. 4–12.

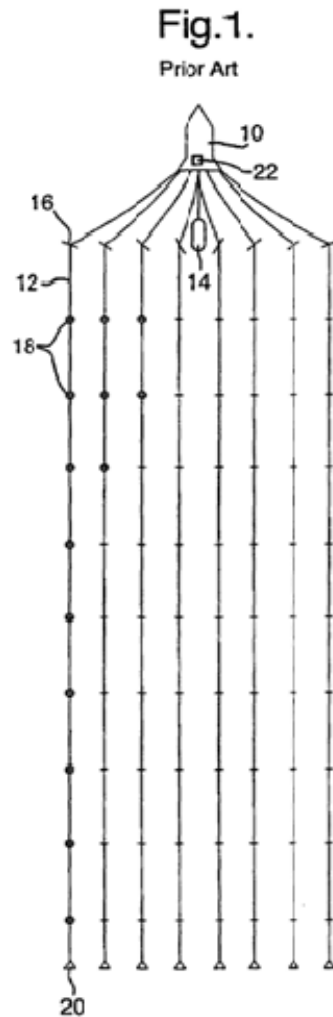


Figure 1 depicts an array of seismic streamers 12 towed behind the vessel.

In order to obtain accurate survey data, it is necessary to control the positioning of the streamers, both vertically in the water column, as well as horizontally against ocean currents and forces which can cause the normally linear streamers to bend and undulate and, in some cases, become entangled with one another. *Id.* at col. 1, l. 42–col. 2, l. 16. As illustrated in Figure 1, each streamer is maintained in a generally linear arrangement behind the boat by deflector 16 which horizontally positions the end of each streamer nearest the vessel. *Id.* at col. 3, ll. 37–46. Drag buoy 20 at the end of each

streamer farthest from the vessel creates tension along the streamer to maintain the linear arrangement.

Additionally, to control the position and linear shape of the streamer a plurality of streamer positioning devices, called “birds” 18, are attached along the length of each streamer. *Id.* at col. 3, ll. 47–49. The birds are horizontally and vertically steerable and control the shape and position of the streamer in both vertical (depth) and horizontal directions. *Id.* at col. 3, ll. 49–55. The birds’s job is usually to maintain the streamers in their linear and parallel arrangement, because when the streamers are horizontally out of position, the efficiency of the seismic data collection is compromised. *Id.* at col. 2, ll. 5–7. The most important task of the birds, however, is to keep the streamers from tangling. *Id.* at col. 3, ll. 65–66.

The invention described in the ’607 patent relies on global control system 22 located on the vessel to control the birds on each streamer to maintain the streamers in their particular linear and parallel arrangement. *Id.* at col. 3, ll. 56–60. The control system is provided with a model (desired) representation of each streamer in the towed streamer array, and also receives (actual) position information from each of the birds. *Id.* at col. 4, ll. 15–19. The control system uses the desired and actual position of the birds to “regularly calculate updated desired vertical and horizontal forces the birds should impart on the seismic streamers 12 to move them from their actual positions to their desired positions.” *Id.* at col. 4, ll. 28–34.

The Specification explains that the control system has two primary modes, a feather angle mode, and a turn control mode. *Id.* at col. 10, ll. 30–32. The feather angle mode is used to maintain the linear form of the streamer at an angle offset from the direction of towing, usually to account

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