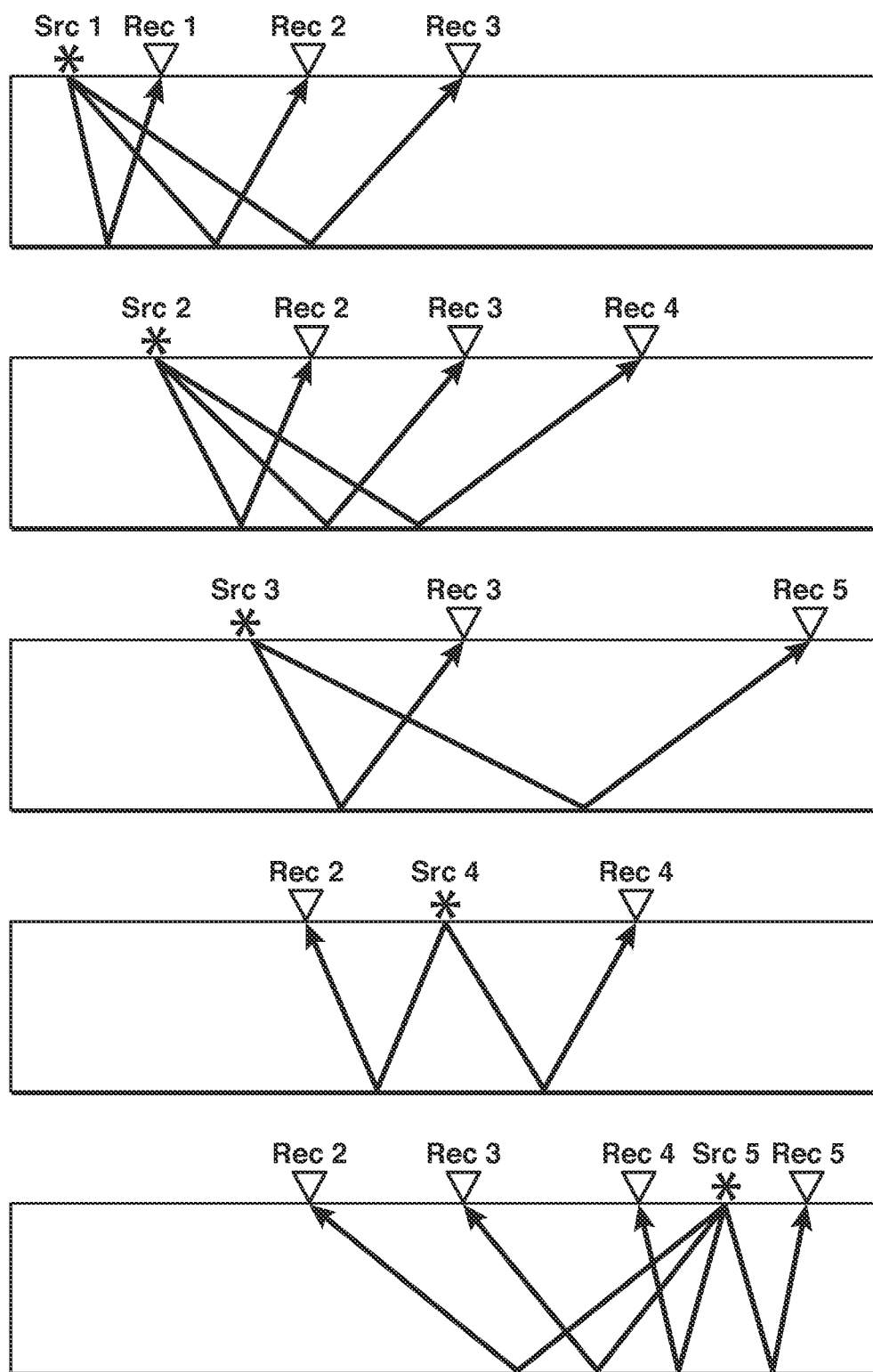


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**FIG. 1**

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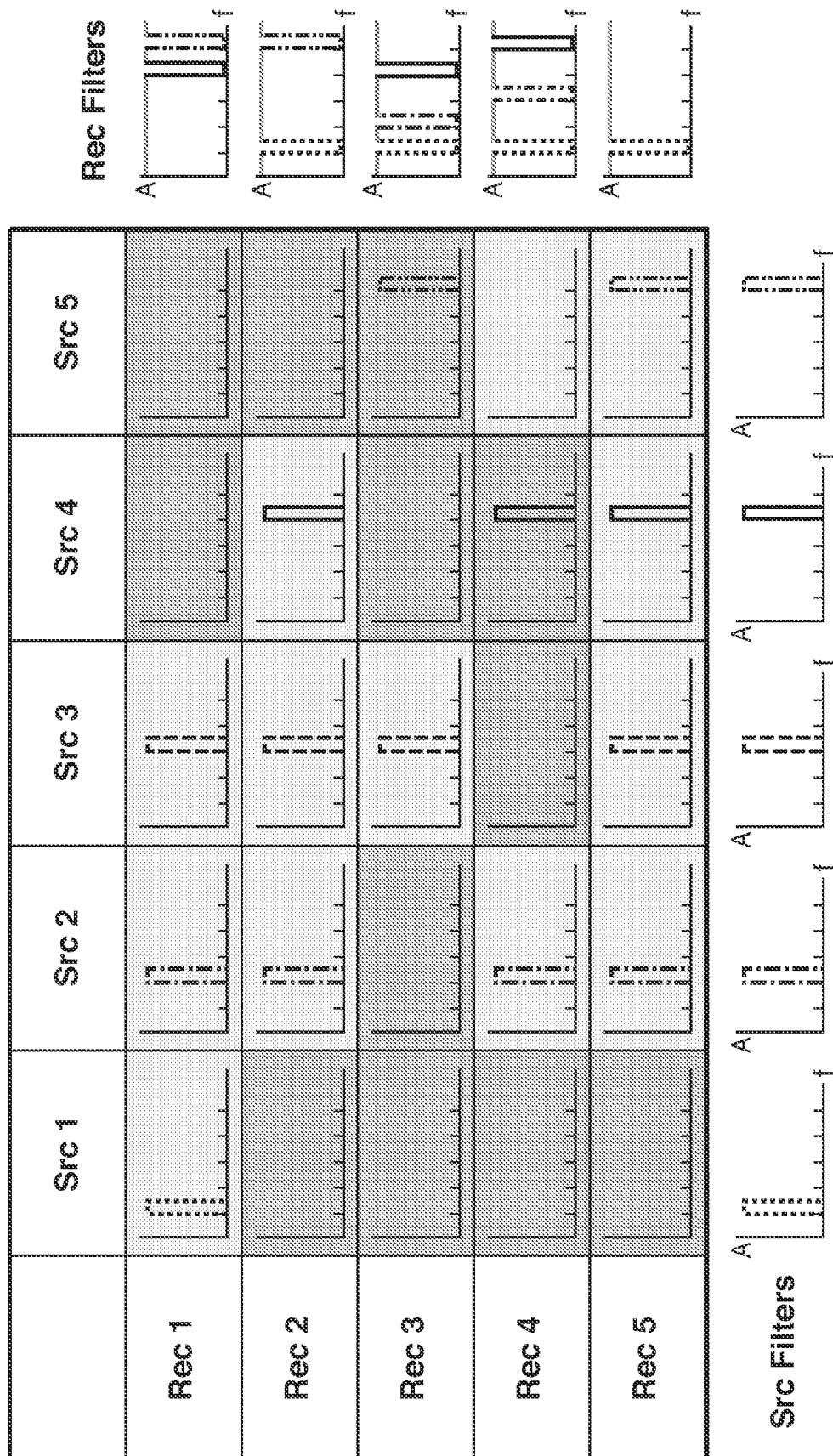


FIG. 2

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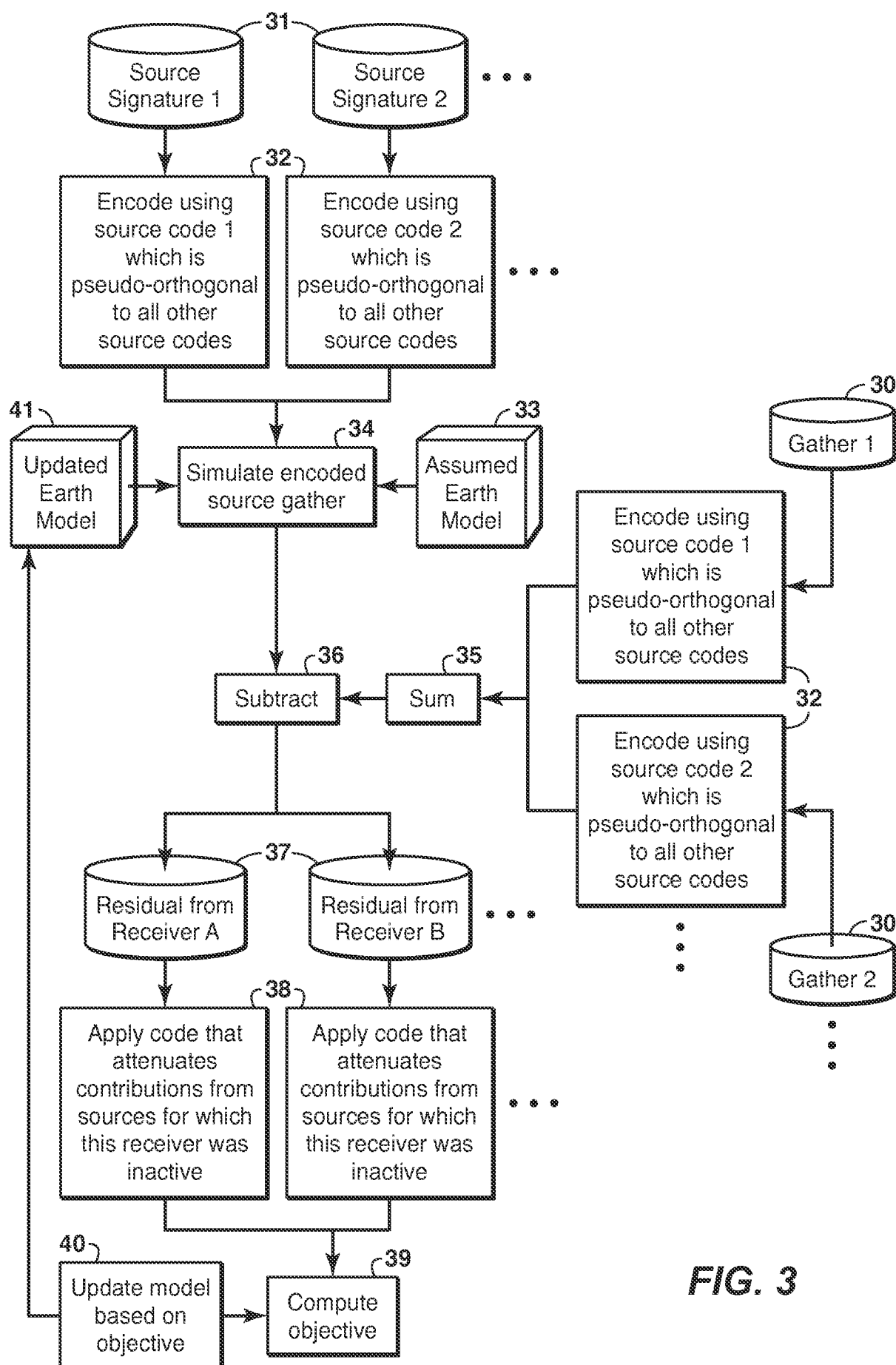


FIG. 3

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US13/22723

A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - G01V 01/28 (2013.01)

USPC - 702/14

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC(8) Classification(s): G01V 01/28, 3/18, G06G 07/48, E21B 43/00 (2013.01)

USPC Classification(s): 702/14, 703/06, 10, 166/369

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

MicroPatent (US-G, US-A, EP-A, EP-B, WO, JP-bib, DE-C,B, DE-A, DE-T, DE-U, GB-A, FR-A); DialogPRO; IEEE/IEEEExplore; Google/Google Scholar; IP.com; Search Terms Used: geophysical, measuring, filter, bandpass filter, low-pass, high-pass, encode, source, phase, frequency, polarity, orthogonal, pseudo-orthogonal, correlation, cross-correlation, simultaneous, simulate, optimize, data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X -- Y	US 2011/0000678 A1 (KREBS, JR et al.) January 6, 2011, [0030]-[0032], [0034], [0047], [0050], [0058]-[0062], [0067], [0077], [0079]	1, 4, 6-13, 20-21 ----- 2, 3, 5, 14
Y	US 4633447 (BODINE, JH) December 30, 1986, column 3, lines 16-24, column 4, lines 30-25, column 6, lines 47-55	2, 3, 5
Y	US 2010/0018718 A1 (KREBS, JR et al.) January 28, 2010, [0096], [0106], [0108], [0109]	14

☐ Further documents are listed in the continuation of Box C.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

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"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

24 May 2013 (24.05.2013)

Date of mailing of the international search report

10 JUN 2013

Name and mailing address of the ISA/US

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