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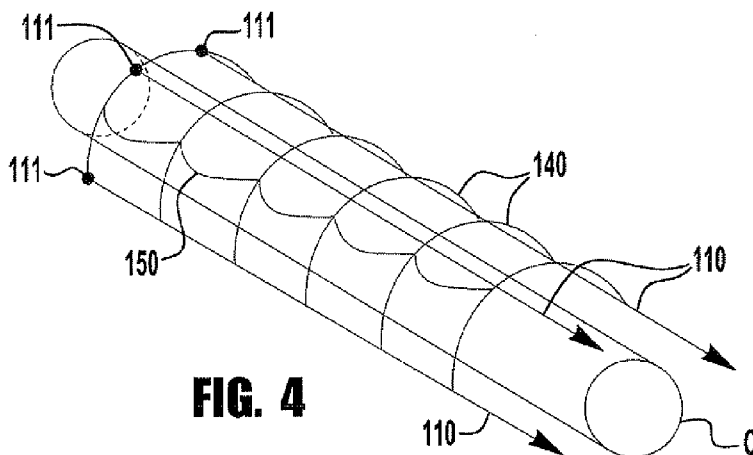


FIG. 4

(57) Abstract: In a method for detecting disruptions proximate to an underground conduit, at least one signal carrying cable is positioned along a length of the conduit and between the conduit and a ground surface. At least one cable engaging member is connected to spaced apart locations on the at least one signal carrying cable to extend laterally outward of the at least one signal carrying cable. Each of the at least one cable engaging members is configured to transmit a force to the at least one signal carrying cable when impacted by an external force. A monitoring signal is provided to the at least one signal carrying cable, and a reflected monitoring signal is received in response to the supplied monitoring signal. One or more properties of the reflected monitoring signal are compared to one or more corresponding properties of a predicted reflected monitoring signal.



INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER IPC(8) - G01R 31/11 (2012.01) USPC - 324/533 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) - G01R 31/00, 31/08, 31/11 (2012.01) USPC - 73/40.5R; 324/500, 512, 527, 532, 533, 534, 642 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) PatBase, Google Patents, Google.com		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	WO 2010/139934 A1 (ROGERS) 09 December 2010 (09.12.2010) entire document	1-21
Y	US 2005/0024210 A1 (MAKI) 03 February 2005 (03.02.2005) entire document	1-21
Y	US 7,830,273 B2 (TWITCHELL JR) 09 November 2010 (09.11.2010) entire document	9,19
A	US 2002/0161539 A1 (JONES et al) 31 October 2002 (31.10.2002) entire document	1-21
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