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Wynn

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(54) **INDUCED POLARIZATION SYSTEM USING TOWED CABLE CARRYING TRANSMITTERS AND RECEIVERS FOR IDENTIFYING MINERALS ON THE OCEAN FLOOR**

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(*) **Notice:** Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

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(57) **ABSTRACT**

A system is provided for detecting minerals and metal-containing materials which are located in sediment deposits on the sea floor and which exhibit an induced polarization response. A streamer cable, which, in use, is towed in the sea behind a ship, includes a series of transmitters and receivers at the free end thereof. The cable is towed such that the free end is in contact with to the sea floor and the transmitters are used to transmit a square wave electrical current into the sediment there. The receivers are used to detect any secondary signals produced by an induced polarization source located on or beneath the sea floor in response to electrical current. Pre-amplifiers connected to the receivers provide noise rejection. On-board electronics process the secondary signals to determine measurement parameters characteristic of the source thereof so as to identify the source. A computer uses this information, together with simultaneously acquired global position data, to determine the location of the source.

18 Claims, 2 Drawing Sheets

