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Wynn

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

(75) Inventor: **Jeffrey C. Wynn**, Sterling, VA (US)

(73) Assignee: **The United States of America as represented by the United States Secretary of the Interior**, Washington, DC (US)

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(58) **Field of Search** 324/347, 354, 324/357, 358, 360, 362, 363, 364, 365, 326, 345

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Primary Examiner—Jay Patidar
(74) *Attorney, Agent, or Firm*—E. Philip Koltos

(57) **ABSTRACT**

A method 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. In this method, a streamer cable is towed in the sea behind a ship. The cable has transmitters and receivers at the free end thereof and the cable is towed such that this free end is close to or trenches into the sea floor. The transmitters are used to transmit a square wave electrical current into the sediment of the sea floor while the receivers are used detect to any secondary signals produced by an induced polarization source located on or in the sea floor in response to the electrical current. The secondary signals are processed to determine measurement parameters characteristic of the source of the secondary signals so as to identify the source and using simultaneously acquired global positional data, to determine the location of the source.

9 Claims, 2 Drawing Sheets