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(54) **WATER MONITORING, DATA COLLECTION, AND TRANSMISSION MODULE**

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(58) **Field of Search** ..... 702/2, 5, 3; 73/170.29, 73/170.33, 170.34

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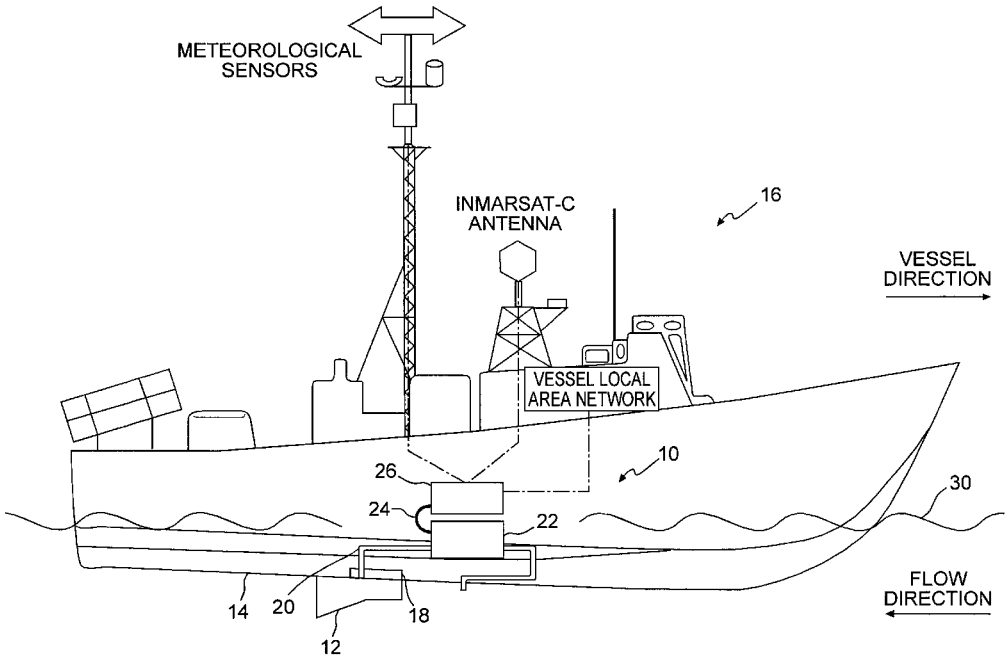
(57) **ABSTRACT**

A water sampling apparatus is disclosed having a water inlet and a water collecting scoop. A pump, in fluid communication with the water inlet, draws a water sample from a body of water through the water inlet. A plurality of testing units, in fluid communication with the pump and the water inlet, determine characteristics of a the water sample. The plurality of testing units are contained within an instrument module. A plurality of electrical components, in communication at least with some of the plurality of testing units, generates data signals concerning the characteristics of the water sample. The plurality of electrical components are contained within a computer module. A computer, in communication at least with some of the plurality of electrical components, collects the data signals generated by the plurality of electrical components and provides the data signals both to a local database and also by satellite transmission to a remote central data base. An automated anti-bio fouling system and an automatic sensor calibration system are also discussed. A water outlet, in fluid communication with the plurality of testing units, returns the water sample to the body of water.

**22 Claims, 17 Drawing Sheets**