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(54) **METHOD AND APPARATUS FOR DETERMINING THE SALINITY OF A SAMPLE**

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(58) **Field of Classification Search**
CPC G01N 27/02; G01N 33/24
See application file for complete search history.

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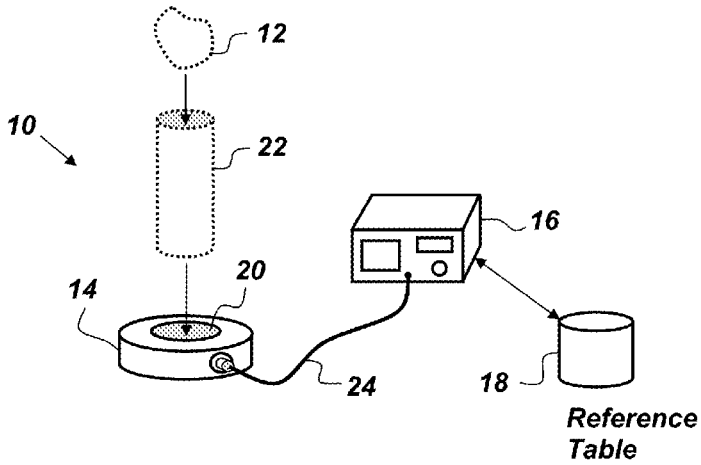
(57) **ABSTRACT**

An apparatus for determining the salinity of an ionic sample consisting essentially of: a single current probe having a central aperture large enough to accommodate a tube that contains the ionic sample; a network analyzer electrically coupled to the current probe, wherein the network analyzer is configured to transmit power into the ionic sample when the tube containing the ionic sample is positioned within the central aperture and then further configured to measure the return loss parameter of a signal voltage waveform reflected from the ionic solution; and a reference table of reference sample properties to which the measured return loss parameter may be compared to determine the level of salinity of the ionic sample.

20 Claims, 13 Drawing Sheets