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(54) **Title:** APPARATUS, METHOD AND SYSTEM FOR DETECTING SALT IN A HYDROCARBON FLUID

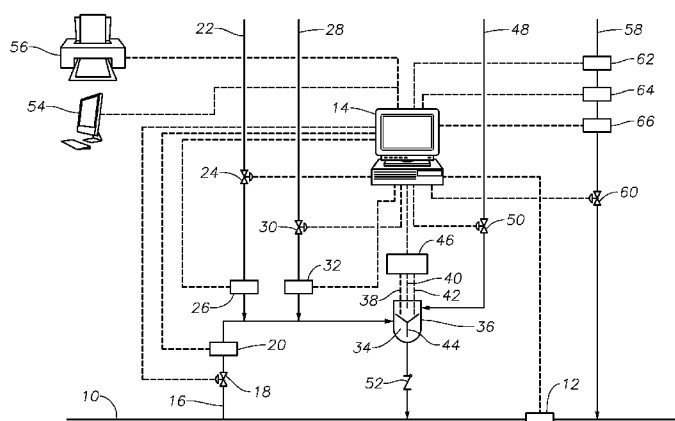


FIG. 1

(57) **Abstract:** A method for determining a salt concentration of a hydrocarbon fluid, using a conductivity sensor and a hydrocarbon testing solution includes forming the hydrocarbon testing solution. The electropolymerizable monomer is operable to form a resultant associated polymer at a peak potential of the electropolymerizable polymer. The method includes introducing the hydrocarbon testing solution into the conductivity sensor. The method includes inducing a range of potential across the hydrocarbon testing solution such that at least a portion of the electropolymerizable monomer polymerizes. The range of induced potential includes the peak potential of the electropolymerizable polymer. The method includes detecting a range of electrical current associated with the range of potential induced. The method also includes the step of determining the salt concentration of the hydrocarbon fluid using the range of potential induced and the range of electrical current detected.

