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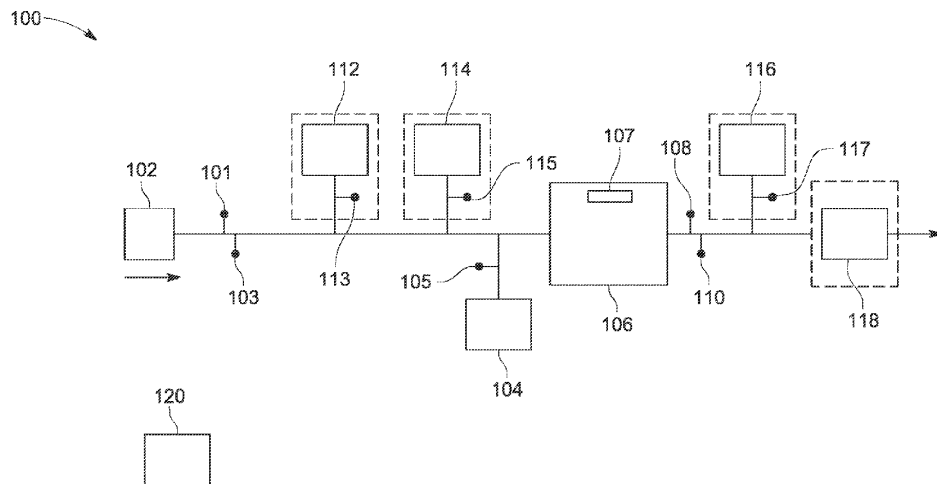


FIG. 3

(57) Abstract: Water treatment systems are disclosed. The system includes an electrochemical cell having an inlet and an outlet, a cathode comprising a catalytic material for electrochemical generation of persulfate free radicals, and an anode, a source of a persulfate positioned upstream of the electrochemical cell, first contaminant concentration sensor positioned upstream of the electrochemical cell, and a controller operatively coupled to receive one or more input signals from at least the first contaminant concentration sensor. Methods of treating water using the electrochemical cell disclosed herein are disclosed. Methods of facilitating water treatment by providing the electrochemical cell disclosed herein are disclosed. Methods of retrofitting a water treatment system having an AOP by providing the electrochemical cell disclosed herein are disclosed.

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