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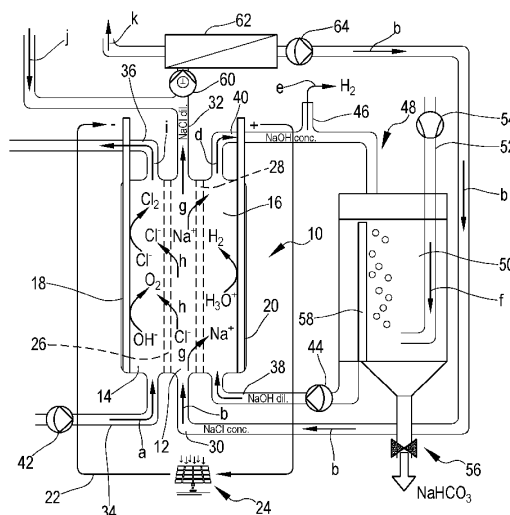
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(54) Title: DESALINATION DEVICE AND PROCESS FOR RECOVERY AND VALORISATION OF CHLORIDES IN DILUTE SOLUTIONS

FIG.1



(57) Abstract: The invention relates to a device and a process for the desalination of NaCl solutions employing a three-chamber electrochemical cell separated by relative ion exchange membranes, namely a succession of a cathode chamber (16; 116), a cation exchange membrane (28; 128), a central chamber (12; 112) for the saline solution, an anion exchange membrane (26; 126) and an anode chamber (14; 114). The oxidation of OH⁻ and the reduction of H₃O⁺ under the formation of OH⁻ and H₂ causes the passage of Na⁺ and Cl⁻ ions from the central chamber to the other chambers, thereby reducing the salt concentration. The feeding of the cathode chamber can be managed in a circuit with the insertion of a carbonation reactor (50) to reduce the concentration of NaOH and eliminate CO₂ from the air. Under certain conditions, the chlorides entering the anode chamber undergo oxidation and the chlorine formed therein reacts with water to produce HCl and HClO.

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