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(54) **GRAVITY FLOW RUNOFF WATER PURIFICATION SYSTEM**

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See application file for complete search history.

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(57) **ABSTRACT**

A gravity flow runoff water purification system is provided. The gravity flow runoff water purification system of the present invention includes a debris filter, a grit chamber, and a linear electrolytic reactor. The linear electrolytic reactor includes a plurality of cell chambers separated by at least one fixed electrode plate operable to receive a current. A bi-polar anode blend is disposed at the bottom of each chamber and is charged by the at least one electrode plate using a VLF AC current in order to prevent plating over of fixed electrodes. The blend includes a conductive and consumable metal fraction, a conductive and non-consumable fraction, and a non-conductive porous spacer. Water runs through the debris filter, through the grit chamber and into the linear electrolytic reactor via gravity. The water flows through each of the cell chambers, thereby clarifying and purifying the water.

11 Claims, 4 Drawing Sheets

