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(54) Title: HYDROCYCLONE REJECT ORIFICE TREATED TO PREVENT BLOCKAGE

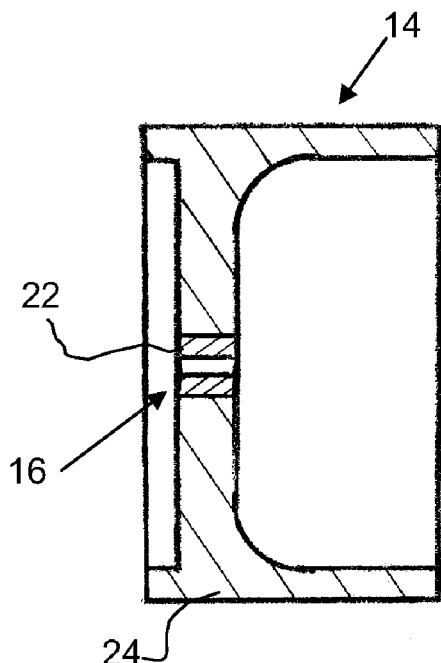


FIG. 3

(57) Abstract: A reject port of a hydrocyclone has an orifice that is treated or coated to prevent blockage thereof when materials pass therethrough, such as produced water, asphaltenes, waxes, "schmoo" or other materials having high potential for scaling. Such surfaces may include, but are not necessarily limited to, superhydrophobic surfaces and/or superoleophobic surfaces such as polytetrafluoroethylene (PTFE), fluorinated ethylene propylene (FEP), perfluoroalkoxy (PFA), tungsten disulfide (WS₂), siloxanes, nanomaterials, surfaces created by diffusion of carbon into a stainless steel without forming chromium carbides (e.g. KOLSTERISING®), anti-scale treatment materials, and combinations thereof. The treated orifice may optionally be removable from the reject port.



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