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(54) Title: CONTROLLED PRESSURE DRILLING SYSTEM WITH FLOW MEASUREMENT AND WELL CONTROL

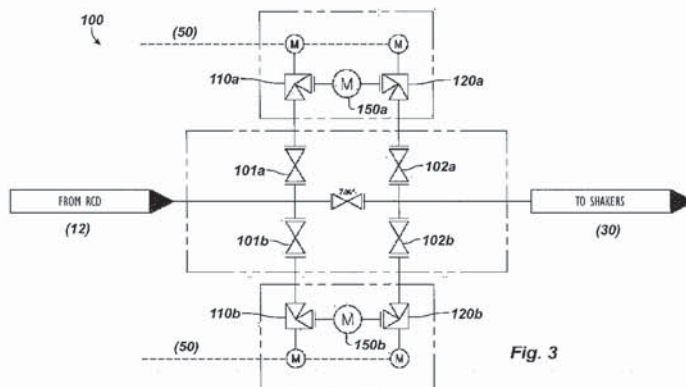


Fig. 3

(57) Abstract: A drilling system for drilling a wellbore has one or more valves or chokes to control the upstream pressure of drilling fluid flow in a controlled pressure drilling operation. A measurement is obtained of the drilling fluid flow from the wellbore. Based on the obtained measurement, the drilling fluid flow is selectively distributed with a distributor through one or more of a plurality of flowmeters, such as Coriolis meters. A reading of the drilling fluid flow is obtained from the selected flowmeter (s). Upstream pressure in the drilling fluid flow is controlled with the one or more valve based at least in part on the reading from the one or more selected flowmeters. The reading can be a flow rate, a pressure, or the like compared to capacities of the flowmeters. Additional valves downstream of the flowmeters can be controlled based on cavitation that the valves are estimated to produce.