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- (54) Title:** ANNULUS PRESSURE SETPOINT CORRECTION USING REAL TIME PRESSURE WHILE DRILLING MEASUREMENTS

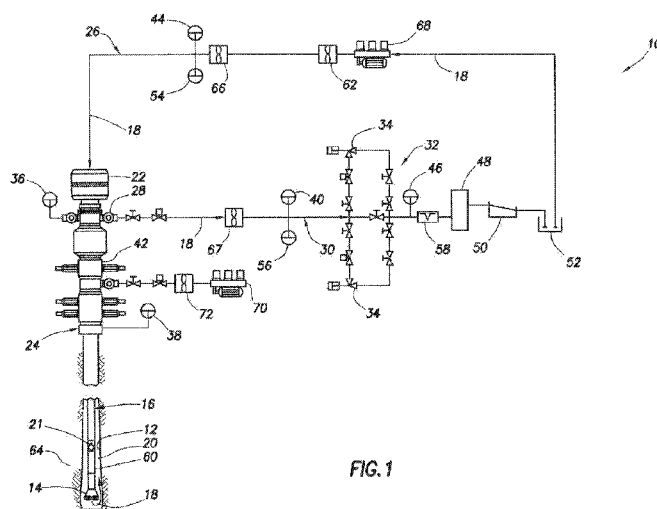


FIG. 1

- (S7) Abstract:** A method of controlling pressure in a wellbore can include determining a real time wellbore pressure $P_{wb_{RT}}$ at a pressure sensor in the wellbore, calculating hydrostatic pressure P_{h1} at the pressure sensor, determining a real time annulus pressure $P_{a_{RT}}$, calculating friction pressure P_f due at least to circulation of the fluid through the wellbore and depth in the wellbore, calculating a friction pressure correction factor CF_{pfi} equal to $(P_{wb_{RT}} - P_{h1} - P_{a_{RT}}) / P_f$, and controlling operation of a pressure control device, based on the friction pressure correction factor CF_{pfi} . The method can further include determining a desired wellbore pressure $P_{wb_{DI}}$ at the pressure sensor, calculating an annulus pressure setpoint $P_{a_{SP1}}$ equal to $P_{wb_{DI}} - P_{h1} - (P_f * CF_{pfi})$, and adjusting the pressure control device as needed to maintain $P_{a_{RT}}$ equal to $P_{a_{SP1}}$.