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(54) **Directional drilling system**

(57) A system is provided for directionally drilling a wellbore using a drill string having a mud motor, a drill bit, and a drive shaft for transmitting torque from the mud motor to the drill bit. The system includes a variable gauge stabilizer that is adjustable between retracted and deployed positions for influencing the drop or build angle of the drill bit. An instrument is carried within the drill string adjacent the drill bit for measuring data while drilling, and a telemetry system transmits the measured data to a driller at the surface. The telemetry system includes a transmitter disposed in the drill string beneath the mud motor for inducing a signal corresponding to the measured data into the subsurface formation surrounding the wellbore, and a receiver disposed in the drill string above the mud motor for detecting and recovering the measured data from the induced signal.

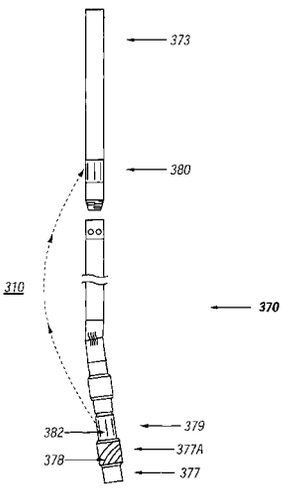

FIG. 19

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