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(54) Title: METHOD AND APPARATUS FOR REMOTELY CONTROLLING DOWNHOLE TOOLS USING UNTETHERED MOBILE DEVICES

(57) Abstract: Remote operation of downhole tools in a subterranean wellbore is performed by inserting untethered, mobile devices sequentially into the wellbore. The mobile devices can include motive means, power supply, communication and data storage means, etc. In one embodiment, the method comprises maneuvering a first mobile device into proximity with a downhole tool, the device powering the tool. The first device is then removed, such as by flowing up or dissolving. The now-powered tool is used to perform a test or other operation. A second mobile device is maneuvered into proximity with the downhole tool and data is transferred. The second device is retrieved with the data or, using on-board logic devices, provides "if-then" commands to the downhole tool. Alternately, a third mobile device can be used to power and transfer commands to the tool. The method can be used for various tasks, such as opening bypass ports on ICD valves.

