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- (71) Applicant (for all designated States except US): **HAL-LIBURTON ENERGY SERVICES, INC.** [US/US]; PO Box 1431, Duncan, Oklahoma 73536 (US).
- (71) Applicant (for MW only): **TURNER, Craig Robert** [GB/GB]; A A Thornton & Co., 235 High Holborn, London WC1V 7LE (GB).
- (72) Inventors; and
(75) Inventors/Applicants (for US only): **LEWIS, Samuel J.** [US/US]; 2005 Meadowview Drive, Duncan, Oklahoma 73533 (US). **FUNKHOUSER, Gary P.** [US/US]; RR5, Box 44C, Duncan, OK 73533 (US). **BADALAMENTI, Anthony** [US/US]; 5426 Portage Rock Lane, Katy, Texas 77450 (US). **RAO, Vikram** [US/US]; 6722 Turkey Farm Road, Chapel Hill, NC 27514 (US). **MYERS, David F.** [US/US]; 100 Grannon Ct, Cary, NC 27519 (US). **GUPTA, Vijay** [IN/US]; 300 Airport Circle, Morrisville, NC 27560 (US). **DAVIS, James L.** [US/US]; 5128 Salem Ridge Road, Holly Springs, NC 27540 (US). **LAMVIK, Michael** [US/US]; 2722 Circle Drive, Durham, NC 27705 (US). **HOERTZ, Paul G.** [US/US]; 108 Trolley Car Way, Morrisville, North Carolina 27560 (US). **SOBY, Lynn M.** [US/US]; 186 Briarfield Drive, Apex, North Carolina 27502 (US). **DUMMER, Andrew K.** [US/US]; 30157 Pharr, Chapel Hill, NC 27517 (US).
- (74) Agent: **TURNER, Craig Robert**; A A Thornton & Co, 235 High Holborn, London WC1V 7LE (GB).

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(54) Title: RADIATION-INDUCED THICKENING AND RADIATION-INDUCED TRIGGERING FOR SET-ON-COMMAND SEALANT COMPOSITIONS AND METHODS OF USE

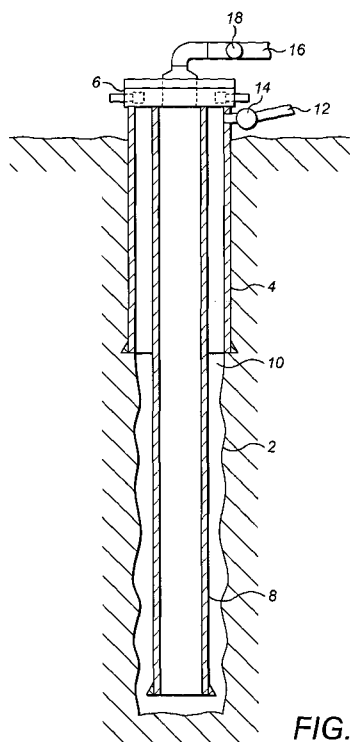


FIG. 1

(57) Abstract: The present invention includes methods and compositions relating to the setting of fluids or slurries in a wellbore. In one embodiment, a method of isolating a portion a wellbore includes preparing a sealant composition having a fluid component, a polymeric additive constituent, and a set modifier component. The sealant composition is placed into a wellbore and subjected to ionizing radiation. The ionizing radiation can cause bonding between polymeric additive constituents and create a polymer matrix within the sealant composition that increases the mechanical strength of the sealant composition. The ionizing radiation also alters the set modifier component, triggering the thickening of the sealant composition.



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