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(54) Title: COMBINED RHEOMETER/MIXER HAVING HELICAL BLADES AND METHODS OF DETERMINING RHEOLOGICAL PROPERTIES OF FLUIDS

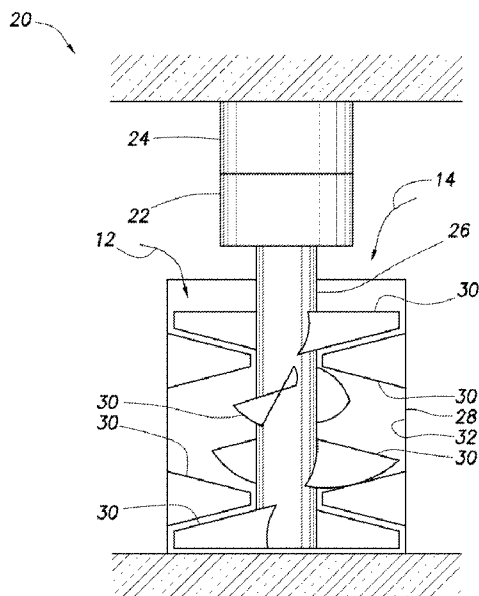


FIG. 2

(57) Abstract: A method of determining rheological properties can include dispensing a fluid into a rheometer including a stator having at least one helical blade, measuring torque (T) due to relative rotation between the stator and a rotor of the rheometer at different rotational speeds (RPM's), calculating shear stress (SS) as follows: $SS = T^{\beta}K$, and calculating volume averaged shear rate (VASR) as follows: $VASR = k1 * RPM^{\alpha}$, where K, k1, α and β are experimentally-derived coefficients. A method of mixing fluids and performing a rheological test on the admixed fluids can include dispensing a fluid into a rheometer, then dispensing another fluid into the rheometer, then mixing the fluids with at least one helical blade of the rheometer, and then measuring torque due to relative rotation between a stator and a rotor of the rheometer. A rotary rheometer can include a rotor, and a stator having at least one helical blade.



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