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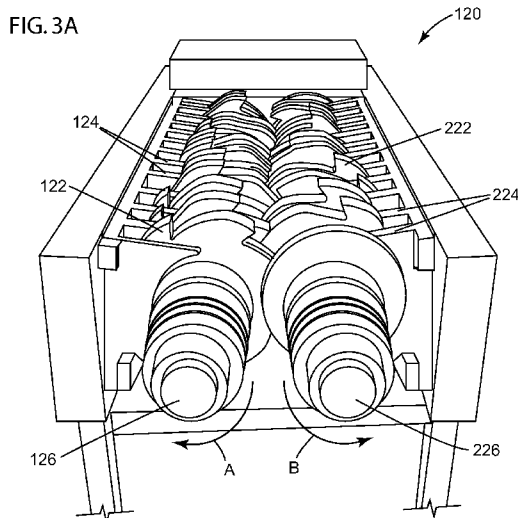
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[Continued on next page]

(54) Title: SUBSEA SOLIDS PROCESSING APPARATUSES AND METHODS



(57) Abstract: In a dual-gradient drilling apparatus, a subsea solids processing unit includes a housing, a solids processing mechanism disposed in the housing between a drilling mud inlet and a drilling mud outlet, and a flushing mechanism configured to flush the solids processing mechanism with a flushing fluid. A subsea solids processing unit may be controlled by rotating the solids processing mechanism in a forward direction and increasing a drive torque when a measured speed of the solids processing mechanism is below a desired rotation speed. The desired rotation speed may be decreased when a measured torque exceeds a selected maximum and a rotation direction of the solids processing mechanism may be reversed when the measured speed falls below a selected minimum.



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