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(54) Title: ROBOTIC SOLUTION TO PENETRATE AND MANEUVER THROUGH SLUDGE AND SEDIMENT

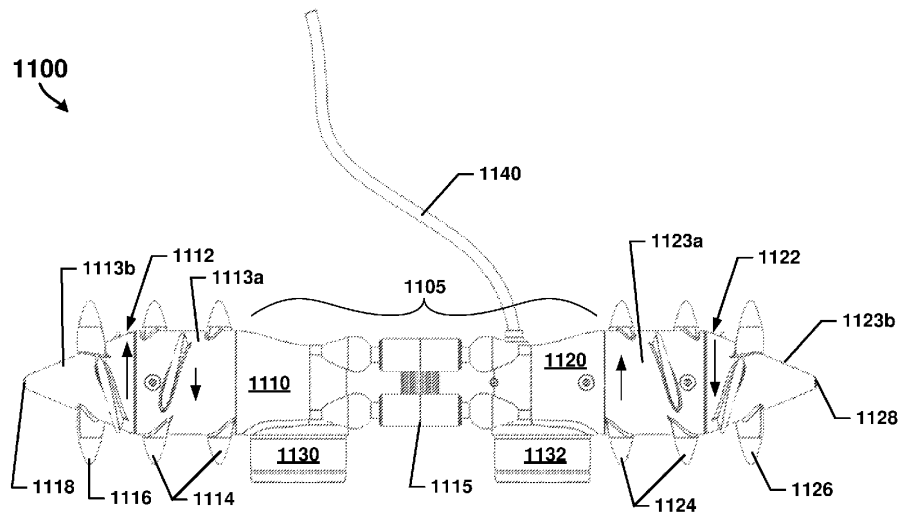


FIG. 11

(57) **Abstract:** Various aspects include a robot including a chassis, a rear section, and a forward propulsion auger. The chassis may include a forward section; a first drive motor positioned within the forward section; a rear section; an interface for coupling the chassis to a fluid intake and power line; and a maneuvering gimbal. The forward propulsion auger may be positioned on a leading end of the forward section and coupled to the first drive motor. The forward propulsion auger may include at least one fluid nozzle configured to eject a fluid therefrom for fluidizing at least a portion of a viscous mixture. The forward section and the rear section may be configured to be selectively pivoted relative to one another about the pivot axis of the maneuvering gimbal. Also, the forward propulsion auger may be configured to be rotated by the first drive motor relative to the forward section about a rotational axis normal to the pivot axis of the maneuvering gimbal.

[Continued on next page]

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