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(54) Title: FLEXIBLE MASTER - SLAVE ROBOTIC ENDOSCOPY SYSTEM

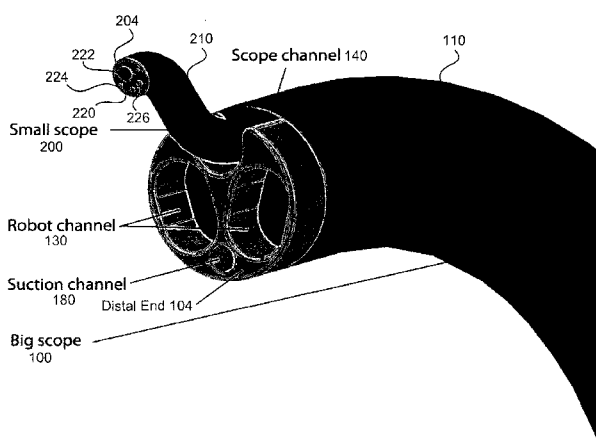


FIG. 3A

(57) Abstract: A master - slave robotic endoscopy system includes a flexible primary endoscope probe having at least one tool channel for carrying a tendon-sheath driven robot arm and corresponding end effector, and a secondary endoscope probe channel for carrying an imaging endoscope. The imaging endoscope provides enhanced image capture range relative to a distal end of the primary endoscope probe by way of a secondary endoscope probe channel distal opening proximally offset from the primary endoscope probe distal end; a ramp structure distally carried by the primary endoscope probe; and/or one or more actuatable distal imaging endoscope regions. Robot arms can include joint primitives that enable robot arm / end effector manipulation in accordance with intended degrees of freedom. A set of quick connect / disconnect interfaces couple an actuation controller to one or more actuation assemblies insertable into the tool channel(s), where each actuation assembly includes tendon-sheath elements, a robot arm, and its corresponding end effector.



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