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(54) Title: ROBOTIC CHAMBER CLEANING AND MAINTENANCE

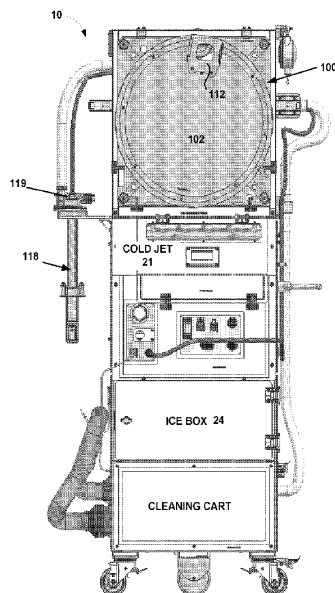


Figure 1

(57) Abstract: A robot used to autonomously operate one or more end-effectors that are disposed on a cleaning cart for performing maintenance operations within a process module includes an end-effector connector disposed on a robot arm. The end-effector connector of the robot is used to couple with a corresponding end-effector robot interface disposed in a portion of the end-effector. The coupling allows the robot to move the end-effector within the process module and operate the end-effector for performing a maintenance operation. Different end-effectors are defined, wherein each end-effector is designed to perform a distinct maintenance operation at the process module and the robot ensures that each of the end-effector performs the maintenance operation in accordance to an established standard and is repeatable.

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