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(54) **LABORATORY STOPCOCK VALVE  
MANIFOLD WITH ARBITRARY MAPPING  
OF FLOW TO ROTATION ANGLE AND  
PROVISIONS FOR MOTORIZED  
PLANETRAY GEAR CONTROL**

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(57) **ABSTRACT**

An article of laboratory glassware for directing the flow of chemical materials is described. The article includes a glass manifold having a plurality of input ports and at least one output port, and a plurality of stopcocks. Each stopcock has an inlet port and an outlet port connected by a passageway through the plug. Each of the stopcock output ports is connected to one of the manifold input ports, and each stopcock input port is connected with one end of a hollow glass tube, and the other end of the hollow glass tube is connected to a ground glass joint. The output ports of the manifold are terminated to a ground glass joint. Each plug is rotationally coupled to a planetary gear arrangement operated by a stepper or electrical motor, and rotational position can be sensed by a sensor. The rotation of each rotating plug is controlled by a computer.

