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(54) Title: PRESSURE CONTROL GASKETS FOR OPERATING PUMP CASSETTE MEMBRANES

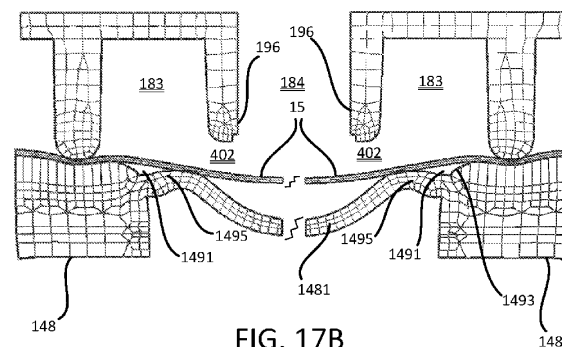


FIG. 17B

(57) Abstract: A pump cassette comprising an outer flexible membrane covering flowpaths, valve chambers and pump chambers of the cassette is designed to be actuated by a control gasket on a base unit arranged to move designated valve and pump portions of the cassette membrane. The performance of a cassette valve may improved by optimizing the configuration of the valve control region of the control gasket overlying the cassette valve. This may improve both fluid flow through the valve and reduce the amount of vibrat-ory noise associated with opening the valve. The gasket valve control or actuation region is at least partially bounded by a vacuum channel facing the outside of the gasket so that a constant vacuum can be applied between the gasket valve control or actuation re-gion and the adjacent portion of the cassette membrane. An improved version of the vacuum channel comprises a flexible inner wall (contiguous with the valve control region) so that the inner wall flexes or partially collapses away from the cassette valve seat, while still maintaining patency of the vacuum channel during the application of negative pressure on the gasket valve actuation region to open the cassette valve.