VOLUMETRIC INFUSION PUMP

Abstract

A medical infusion pump is disclosed which provides for greatly improved accuracy in the delivery of medicaments to a patient. Among the various features included in the instant invention is a pumping body which serves to deform and reform a tube so as to maintain the initial cross section thereof and thereby preserve the output accuracy of the pump. Also disclosed with regard to the pumping body is a wholly mechanical synchronization of the pumping body and valves associated therewith and coactive with the aforementioned synchronization a mechanical linearization of output of the pumping body per each pumping cycle. Additionally, several features which serve to enhance the utility of the instant invention are also included therein among which is an associated assembly operative to automatically load or disload a tube or IV set into or out of the pumping body. Associated with the assembly operative to automatically load or disload a tube and disclosed herein is an assembly operative to selectively open or close a slide clamp associated with the tube in such a way as to ensure that the tube is occluded such that in combination with the valves associated with the pumping body, a condition of free-flow of medicament is never realized. Additionally disclosed are sensor housings adapted to measure various quantities associated with fluid flowing through the tube wherein the housings are with associated components adapted to achieve a substantially normal orientation with respect to the sidewall of the tube and in the achieving of such normal orientation, expressing an essentially zero elastic stress gradient across the tube.

Figure 1