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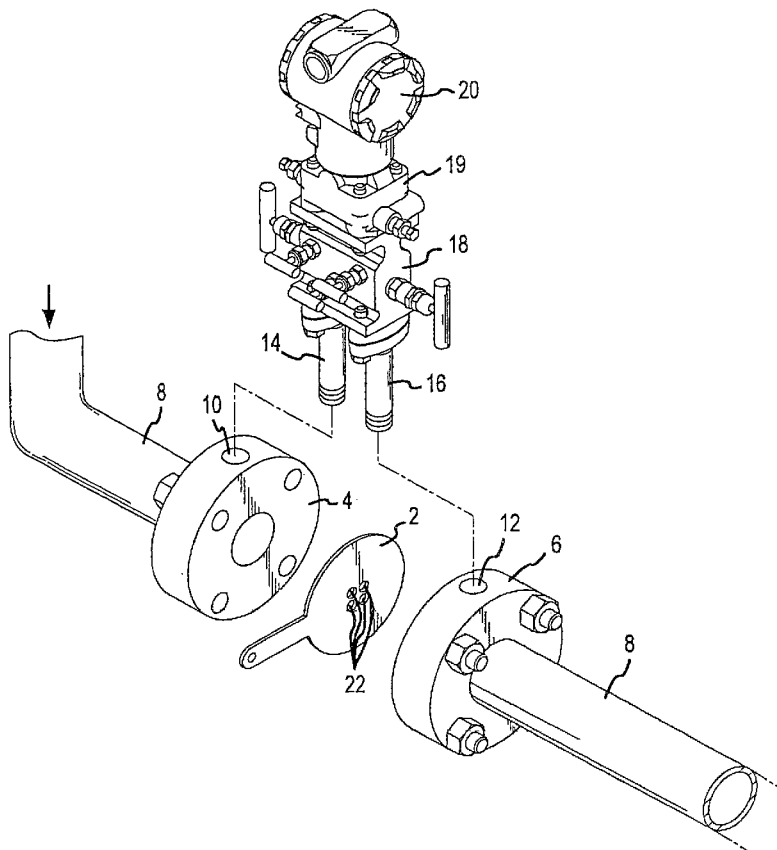
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(54) Title: AVERAGING ORIFICE PRIMARY FLOW ELEMENT



(57) Abstract: A process flow device that includes a self-averaging orifice plate type of primary flow element (2) for measuring, by a differential pressure process, the volumetric rate of fluid flow at a point in a fluid carrying conduit (8) where the velocity profile (7) of the fluid is asymmetric with respect to the longitudinal axis of the conduit. The improved flow element comprises a planar flow-impeding plate (2) disposed transversely across the interior of the conduit (8) and perpendicular to the longitudinal axis thereof. The plate includes at least three circular apertures (22) eccentrically disposed with respect to the longitudinal axis of the conduit to create static pressure averaging on the downstream side of the plate. Upstream and downstream static pressure sensing ports are respectively provided on opposite sides of the flow impeding plate.



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