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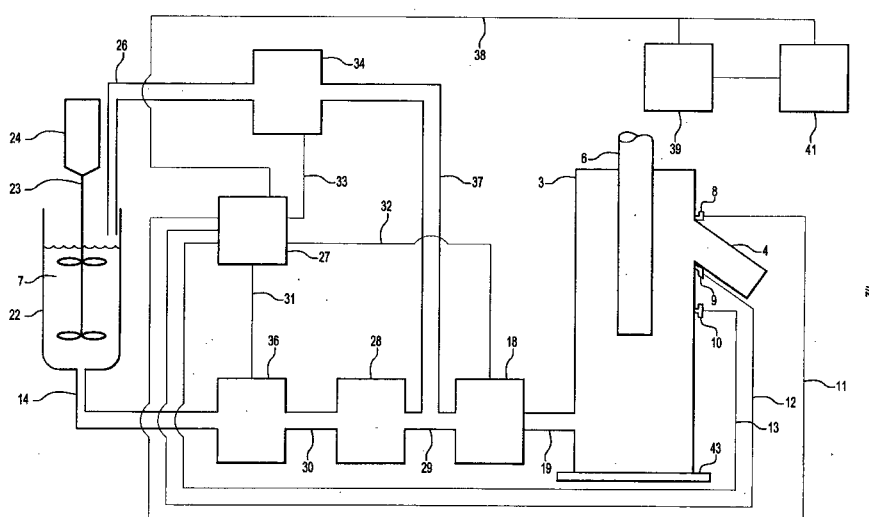


FIG. 1

(57) Abstract: The volumetric rate of flow out of a flow line (4) of a bell nipple (2) is a function of the pressure of the head of liquid (7) above the threshold of the intersection of the vertical pipe (3) and the flow line (4). A pressure which is related to that pressure is measured by a pressure transducer (10) which is mounted below the threshold. Density of the fluid (7) is inferred by using the measured pressure as an input to a trained neural network.