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United States Patent [19]

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Austin et al.

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- [54] **SYSTEM FOR PROPORTIONED LIQUID DISPENSING**
- [75] Inventors: **Mickey D. Austin, Duncanville; Richard J. Keller, Mesquite, both of Tex.**
- [73] Assignee: **Kelrus Corp., Mesquite, Tex.**
- [21] Appl. No.: **621,773**
- [22] Filed: **Dec. 4, 1990**
- [51] Int. Cl.⁵ **B67D 5/00**
- [52] U.S. Cl. **222/57; 222/129.2; 222/650; 119/72; 137/98; 137/101.21**
- [58] Field of Search **222/57, 71, 650, 129.2, 222/52; 119/72, 72.5, 74; 137/3, 98, 101.21, 101.31**

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Primary Examiner—Michael S. Huppert
Assistant Examiner—Anthoula Pomrening
Attorney, Agent, or Firm—Daniel Rubin

[57] ABSTRACT

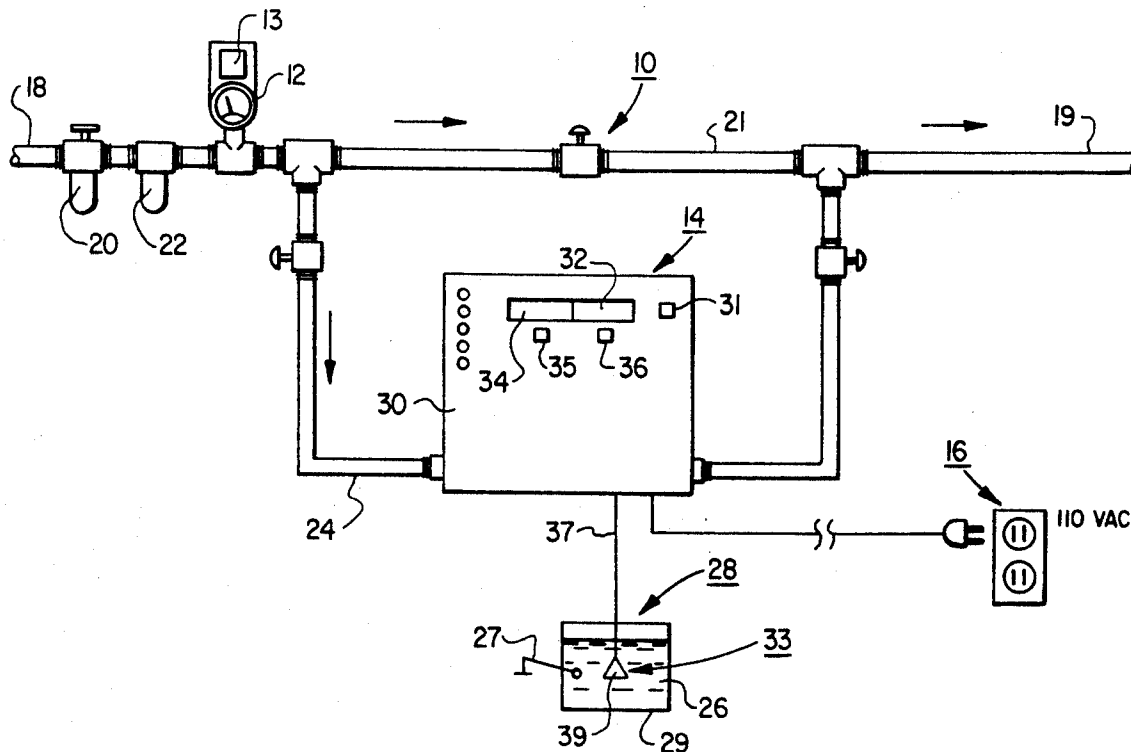
A system for proportional liquid dispensing of two liquids, the first of which can comprise the main flow drinking water supplied to livestock or poultry and the second of which can comprise controlled quantities of medication or nutrient to be introduced into the drinking water. Comprising the system is a solenoid operated pump for discharging controlled quantities of the second liquid into the main flow. A flow meter emits an electrical signal of the main flow rate at any given time while an optical pressure sensor emits an electrical signal indicative of the static pressure of the main flow. Logic circuits combine the flow rate and pressure signals for varying pump operation to controllably maintain a predetermined mixture ratio of the two liquids.

13 Claims, 5 Drawing Sheets

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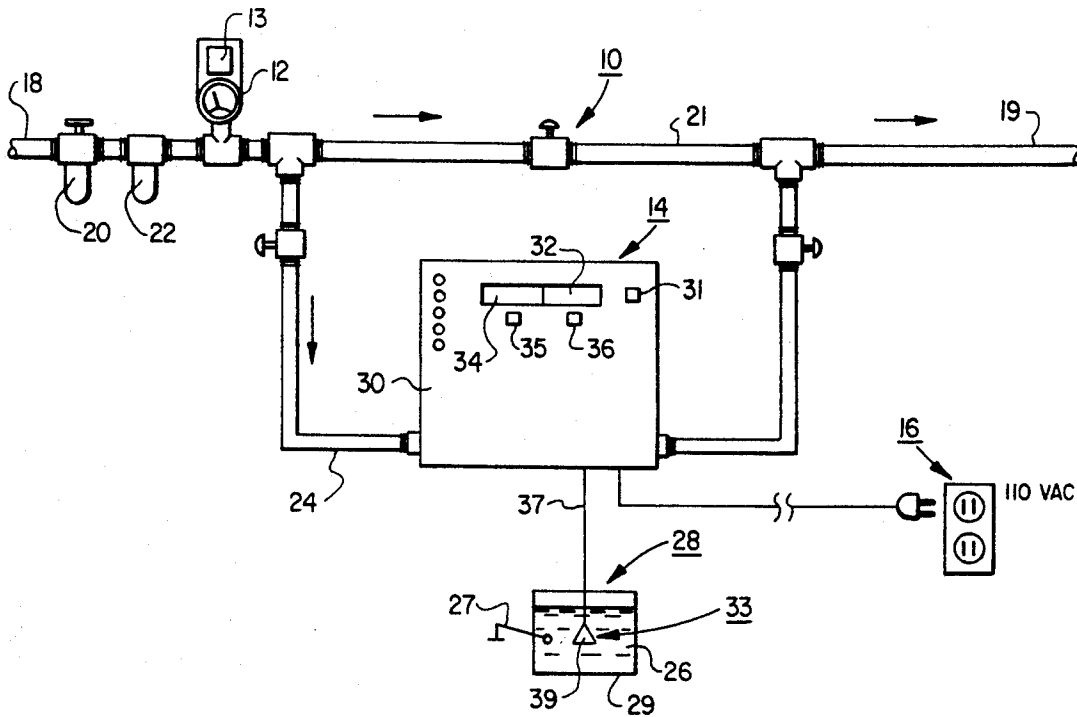


FIG. 1A

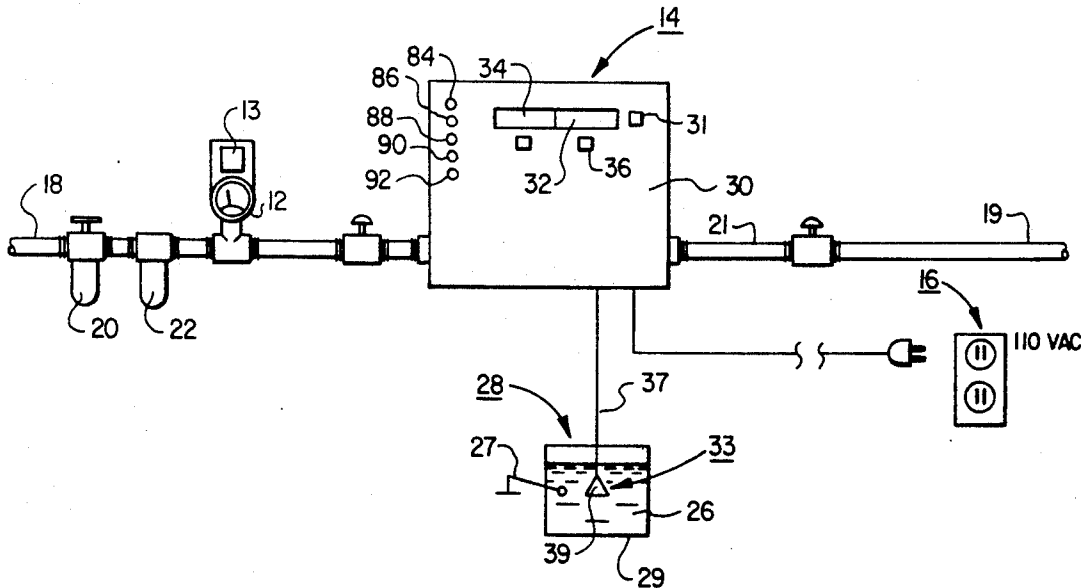
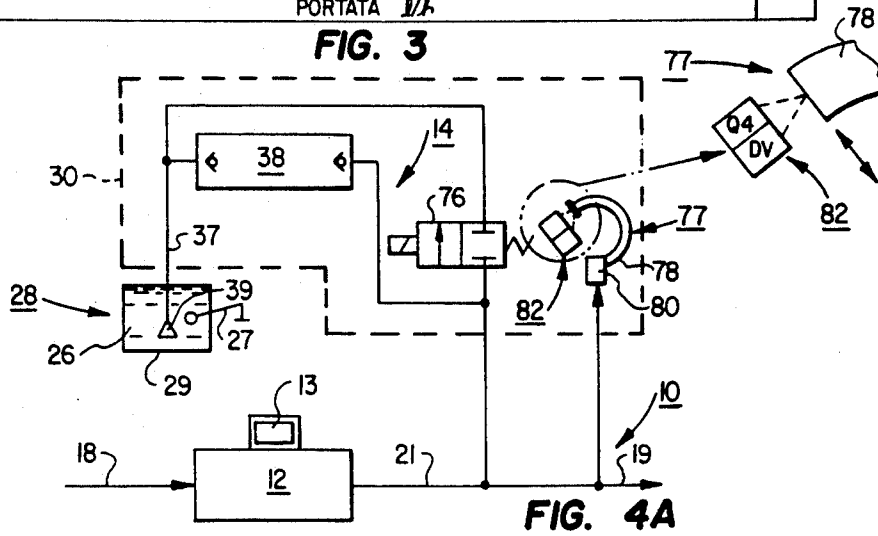
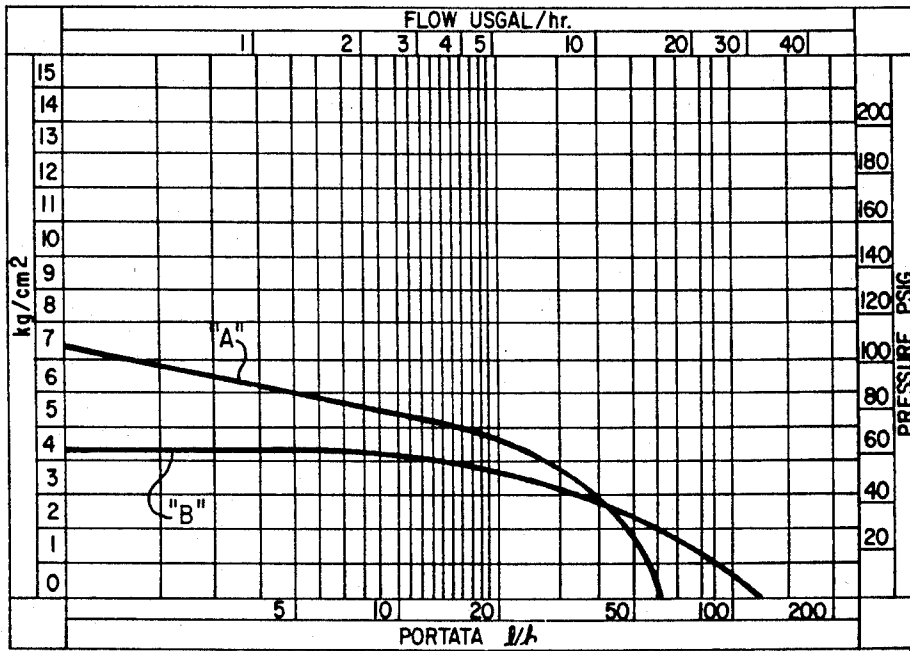
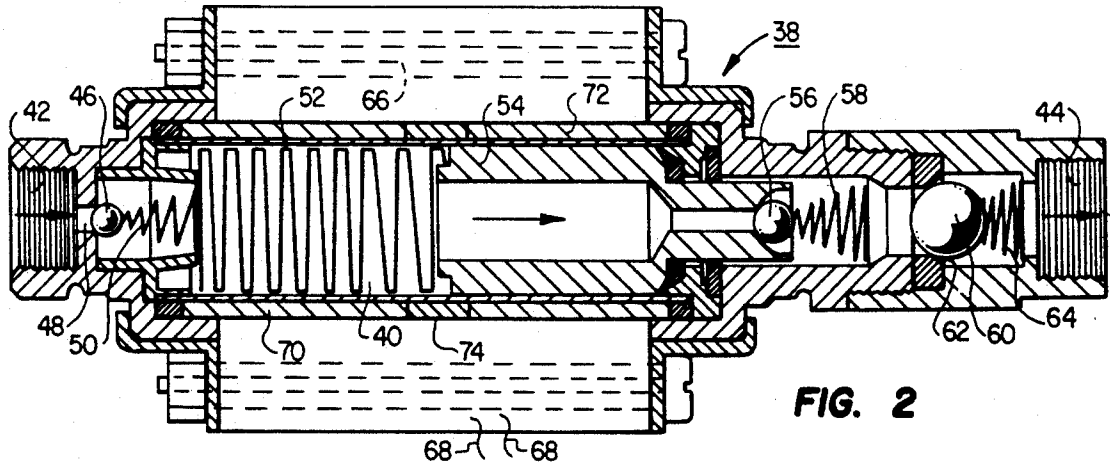


FIG. 1B



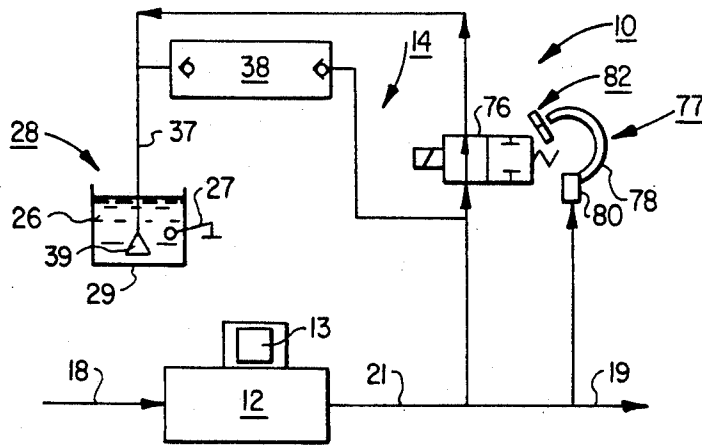


FIG. 4B

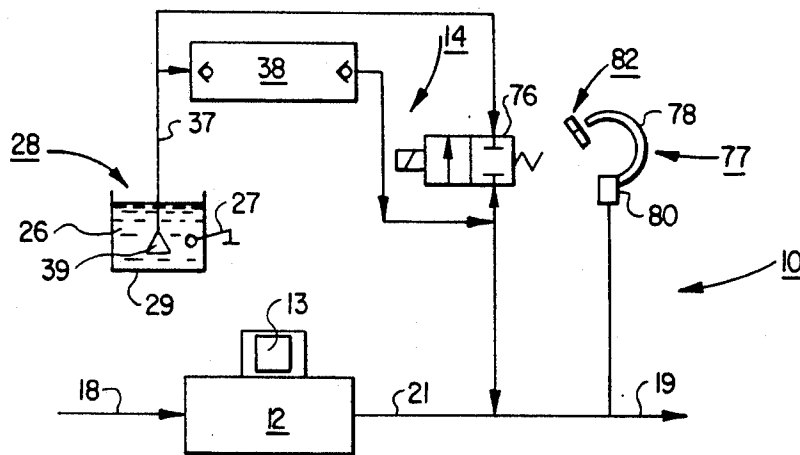


FIG. 4C

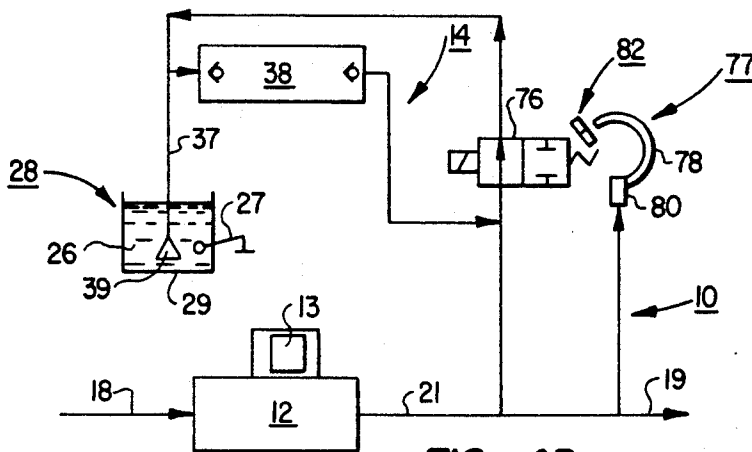


FIG. 4D

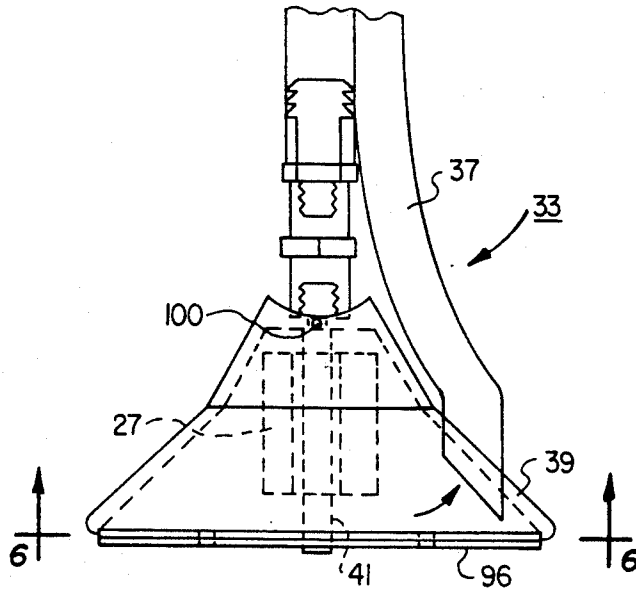


FIG. 5

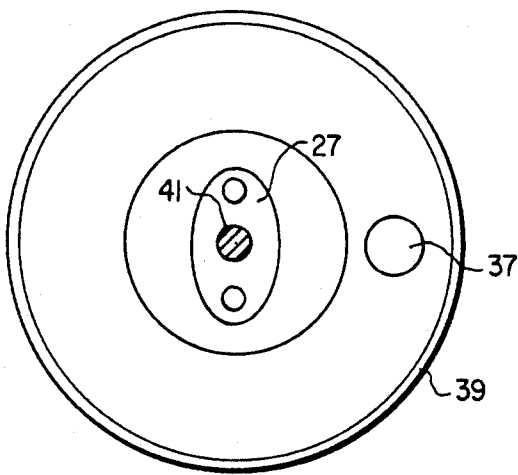


FIG. 6

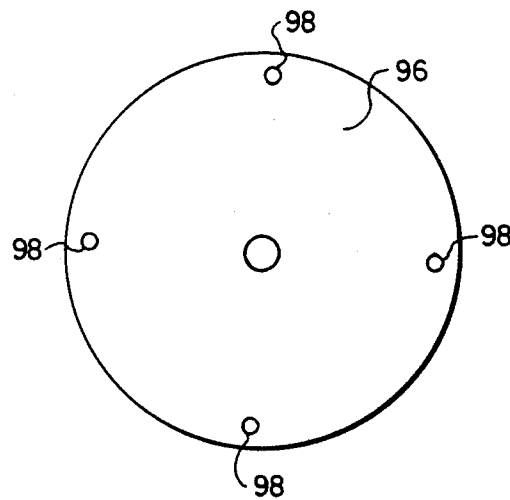


FIG. 7

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