

[54] PERISTALTIC DILUTOR SYSTEM AND METHOD

3,737,251 6/1973 Berman et al. .... 417/12

[76] Inventor: Eduard Engelbrecht, Park Vronesteyn 49, Voorburg, Netherlands

Primary Examiner—Robert M. Reese  
Attorney, Agent, or Firm—Kurt Kelman

[22] Filed: Oct. 10, 1974

[57] ABSTRACT

[21] Appl. No.: 513,734

Geometric dilution of a liquid is effected in a series of successive containers through a flexible tube having an upstream end in communication with a diluent liquid supply and a downstream end in successive communication with each of the successive containers. A peristaltic pump is arranged between the upstream and downstream tube ends and the pump has a rotor with rollers distributed concentrically about the rotary shaft of the rotor and angularly spaced equidistantly thereabout. The flexible tube is laced between the pump rollers and a concavely arcuate pumping shoe to occlude the tube locally at equidistantly spaced points along the length of the tube during rotation of the rotor. The rotor is gently entrained through predetermined angular portions of a full rotation in alternate directions in such a way that the rollers are always located in the same angular position when the rotor is arrested. Rotation in one direction pumps a first dose of the liquid at the downstream tube end inwardly and rotation in the opposite direction for a second and larger angular portion pumps outwardly the first dose of liquid and a dose of the diluent liquid pumped from the upstream tube end.

Related U.S. Application Data

[63] Continuation-in-part of Ser. No. 308,783, Nov. 22, 1972, abandoned.

[30] Foreign Application Priority Data

Nov. 24, 1971 Switzerland..... 17132/71  
June 22, 1972 Switzerland..... 9402/72  
Nov. 21, 1972 France ..... 72.42147  
Nov. 22, 1972 United Kingdom..... 54165/72

[52] U.S. Cl. .... 23/230 R; 23/259  
[51] Int. Cl.<sup>2</sup> ..... G01N 1/00; G01N 31/00  
[58] Field of Search ..... 23/259, 253, 230 R,  
23/230 A, 253 A; 417/12, 477; 222/63, 76,  
207; 318/265; 261/121 R

[56] References Cited

UNITED STATES PATENTS

3,241,921 3/1966 Ferrari ..... 23/253 R  
3,437,895 4/1969 Peters ..... 318/265 X  
3,475,128 10/1969 Thiers ..... 23/230 R  
3,666,420 5/1972 Paatzsch ..... 23/253 R

3 Claims, 9 Drawing Figures

