



US005811696A

United States Patent [19]

[11] Patent Number: **5,811,696**

Jobson

[45] Date of Patent: **Sep. 22, 1998**

[54] **ISOKINETIC FLUID SAMPLING METHOD**

[75] Inventor: **Harvey Eugene Jobson, Reston, Va.**

[73] Assignee: **The United States of America as represented by the Secretary of the Interior, Washington, D.C.**

[21] Appl. No.: **898,250**

[22] Filed: **Jul. 22, 1997**

Related U.S. Application Data

[62] Division of Ser. No. 571,645, Dec. 13, 1995, Pat. No. 5,693,894.

[51] Int. Cl.⁶ **G01N 1/20; G01N 1/14**

[52] U.S. Cl. **73/863.03; 73/863.52; 73/863.58**

[58] Field of Search **73/863.03, 863.02, 73/864.34, 864.35, 863.43, 863.41, 863.42, 863.52, 863.58**

[56] References Cited

U.S. PATENT DOCUMENTS

2,693,114	11/1954	Tapp et al.	73/863.02
2,983,147	5/1961	Morgan	73/863.02
3,302,464	2/1967	Langguth .	
3,466,782	9/1969	Stuart, Jr.	43/4
3,513,709	5/1970	Pullos .	
3,635,092	1/1972	Maughan et al.	73/864.02

3,715,913	2/1973	Anderson .	
3,719,081	3/1973	Lynn et al.	73/863.03
3,793,887	2/1974	Anderson et al. .	
4,002,066	1/1977	Ratigan .	
4,008,621	2/1977	Ostojic et al.	141/25 X
4,091,675	5/1978	Jennison .	
4,091,835	5/1978	Frampton	137/118
4,287,763	9/1981	Richard	73/863.21
4,446,749	5/1984	Low	73/863.23
4,532,813	8/1985	Rinehart	73/863.02
4,606,233	8/1986	Burney	73/864.03
5,090,257	2/1992	Bruce	73/863.03
5,219,390	6/1993	McClane	73/864
5,317,930	6/1994	Wedding	73/863.03
5,437,201	8/1995	Krueger	73/864.35

Primary Examiner—Thomas P. Noland
Attorney, Agent, or Firm—E. Philip Koltos

[57] ABSTRACT

A sampler for obtaining an isokinetic sample of a flowing fluid. A liquid-filled, fluid-tight container has a deflated bag within it. The sampler is positioned within the flowing fluid stream, and the liquid is pumped from the container at a rate proportional to the flow rate of the flowing fluid to draw a sample of the fluid into the bag at the same rate as the flow rate of the flowing fluid. When the bag is filled it can be removed from the container and the container inlet tube replaced, allowing the sampler to be used for another sample without laborious cleaning in the field.

8 Claims, 2 Drawing Sheets

