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(54) **VARIABLE DEPTH AUTOMATED DYNAMIC WATER PROFILER**

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(51) **Int. Cl.**

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(57) **ABSTRACT**

(52) **U.S. Cl.** **73/170.29; 73/53.01**

(58) **Field of Classification Search** 73/61.41, 73/53.01, 170.29

See application file for complete search history.

A winch-based system is used to raise and lower a hydrological probe into a water column to automatically dynamically obtain measurement data of a water column at incremental depths over selected time intervals. The winch-based system can be powered by a relatively low-power power source to cause the electric motor to controllably operate to wind and unwind the cable at a desired rate in a manner which can cause the upward and downward movement of the probe at incremental measurement depths. The disclosure also describes related systems. Additionally, a method for enhancing the life of a hydrological probe by storing the probe at an immersed subsurface depth is also described.

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43 Claims, 22 Drawing Sheets

