United States Patent [19]

Waters

[11] 4,033,278

[45] **July 5, 1977**

[54]	APPARATUS FOR CONTROLLING LATERAL POSITIONING OF A MARINE SEISMIC CABLE				
[75]	Inventor:	Kenneth H. Waters, Ponca City, Okla.			
[73]	Assignee:	Continental Oil Company, Ponca City, Okla.			
[22]	Filed:	Feb. 25, 1976			
[21]	Appl. No.: 661,065				
[52]	U.S. Cl				
[51]	Int. Cl. ²	B63B 21/56; B63B 17/00			
[58]	Field of Se	earch 114/66.5 H, 121, 235 B, 114/236; 244/44, 123; 340/3 T, 7 PC			
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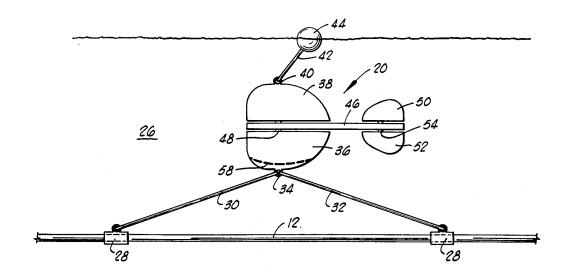
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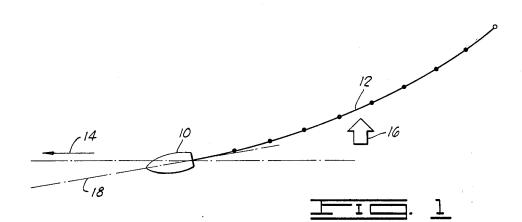
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Primary Examiner—Stephen G. Kunin Attorney, Agent, or Firm—William I. Miller					

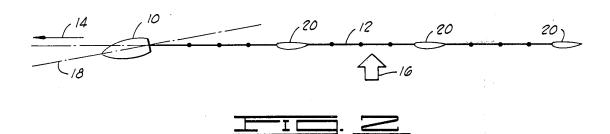
[57] ABSTRACT

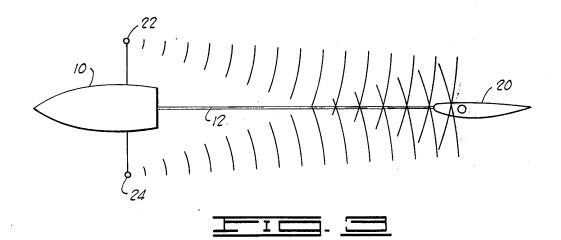
Apparatus for controlling the lateral position of a marine seismic cable relative to water current which is effective through utilization of one or more cable paravanes having a thrust adjustable hydrofoil and/or stabilizer elements. The hydrofoil is constructed as a pivotally supportable frame having an elastomeric skin which is supported on the sides of the hydrofoil by movable support members, and a servo-controlled reversible motor is controlled to reciprocate the opposite side support members relative to the hydrofoil longitudinal center line. One or more hydrofoils may then be controlled as to angle of attack and camber from the towing ship by means of acoustic energy transmission and reception at the paravane.

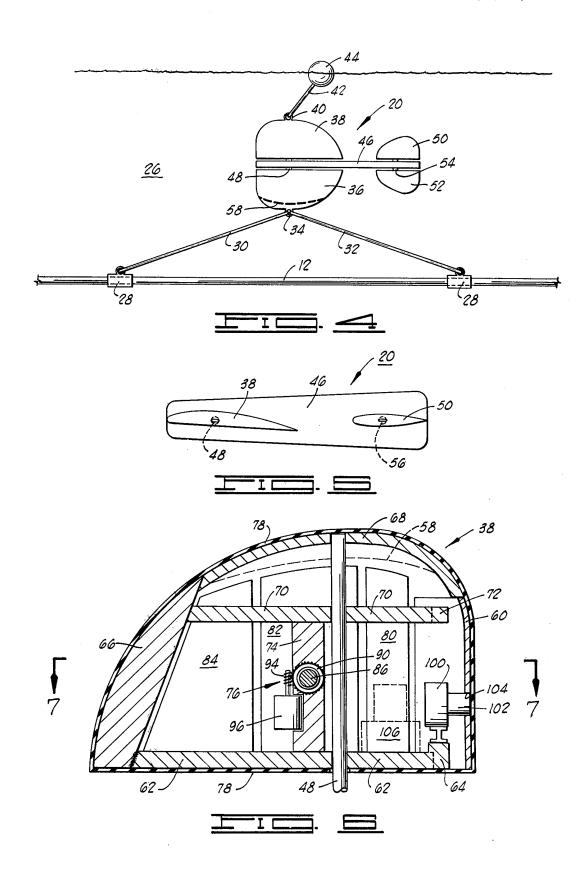
5 Claims, 9 Drawing Figures

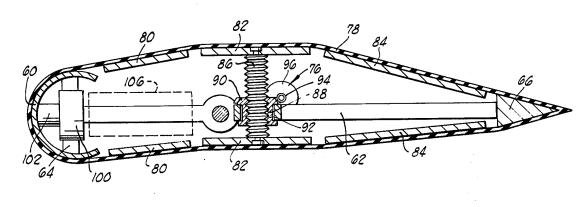




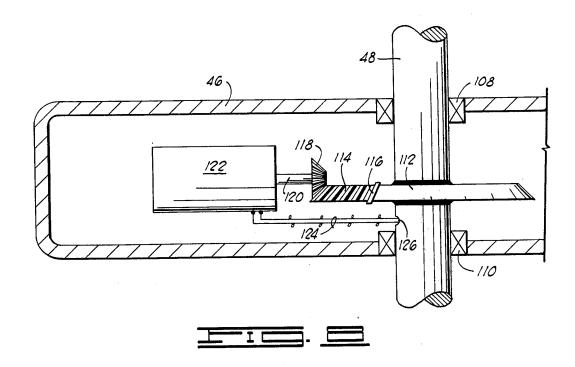


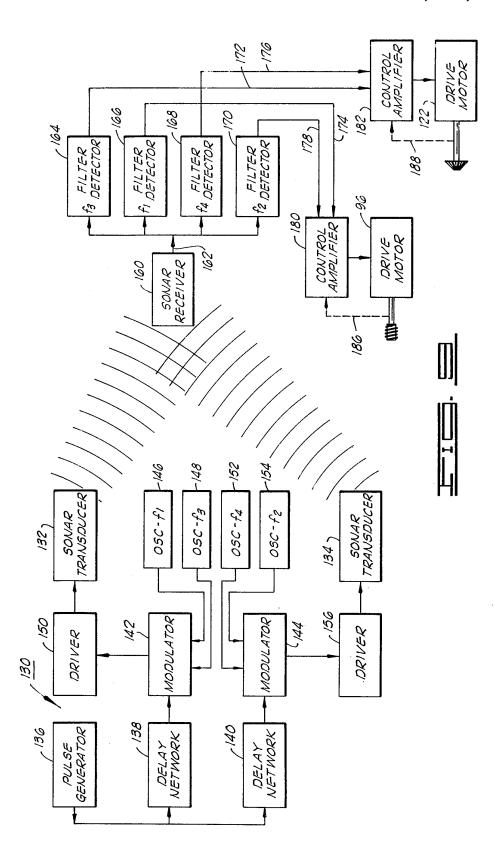












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