

Ex. PGS 1032

- [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.** 114/245; 114/281; 340/3 T; 340/7 PC
- [51] **Int. Cl.²** B63B 21/56; B63B 17/00
- [58] **Field of Search** 114/66.5 H, 121, 235 B, 114/236; 244/44, 123; 340/3 T, 7 PC

3,753,415 8/1973 Burtis 114/126

Primary Examiner—Stephen G. Kunin
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[57] **ABSTRACT**

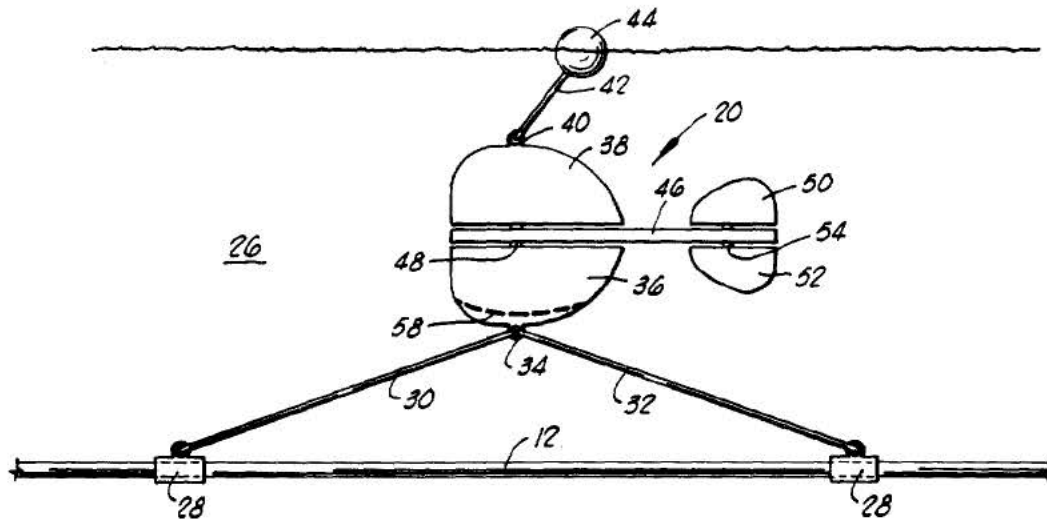
Apparatus for controlling the lateral position of a marine seismic cable relative to water current which is effective through utilization of one or more cable paravanes having a thrust adjustable hydrofoil and/or stabilizer elements. The hydrofoil is constructed as a pivotally supportable frame having 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.

[56] **References Cited**

UNITED STATES PATENTS

3,375,800	4/1968	Cole et al.	114/235 B
3,434,446	3/1969	Cole	114/235 B
3,611,975	10/1971	Ashbrook	114/235 B

5 Claims, 9 Drawing Figures



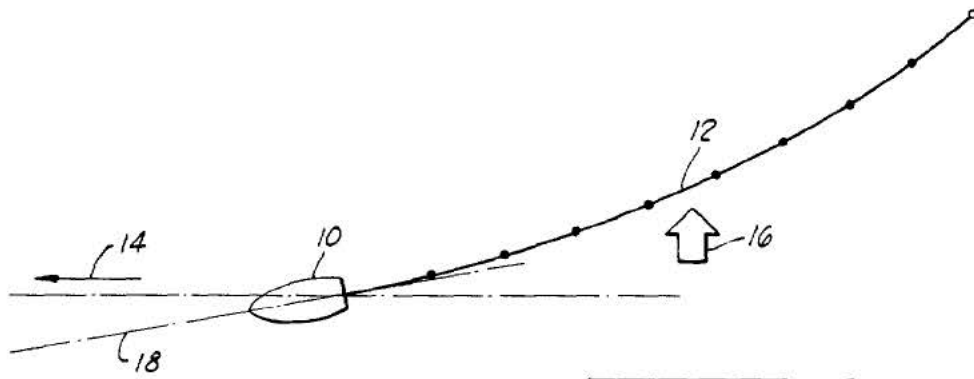


FIG. 1

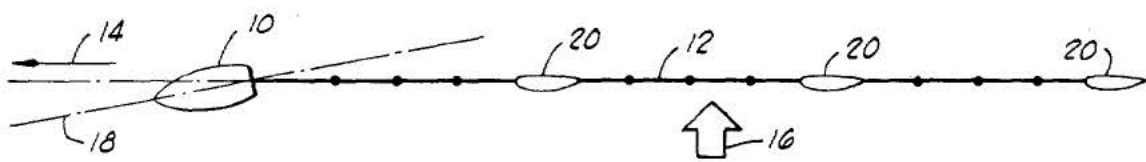


FIG. 2

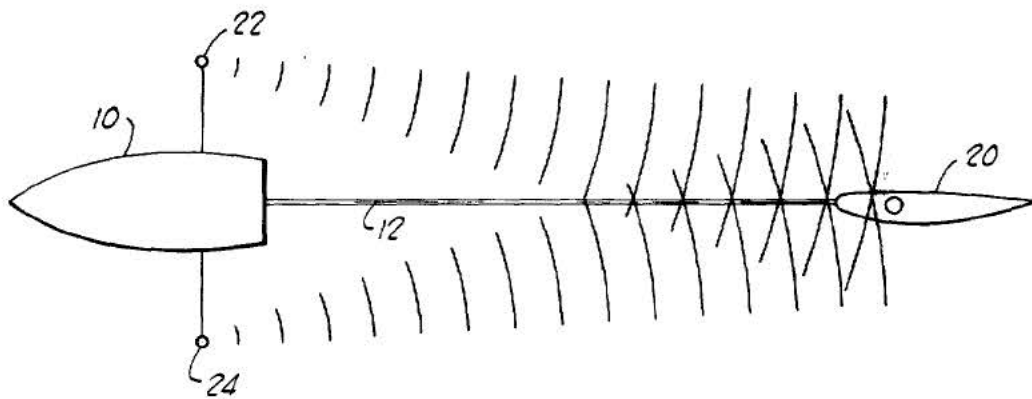


FIG. 3

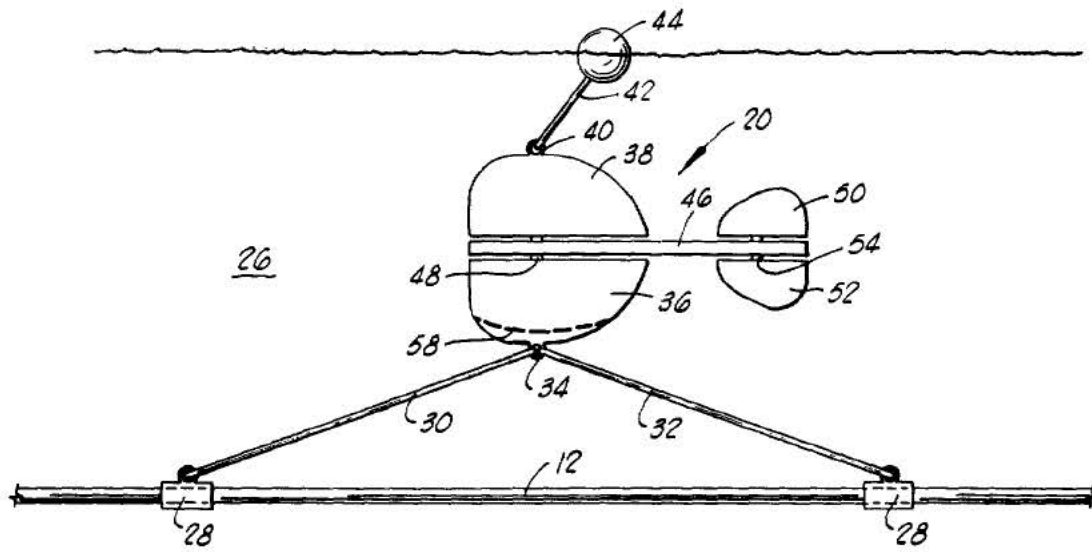


FIG. 4

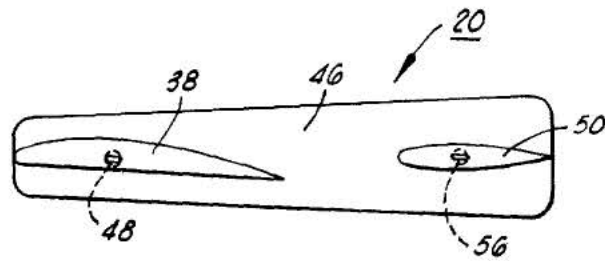


FIG. 5

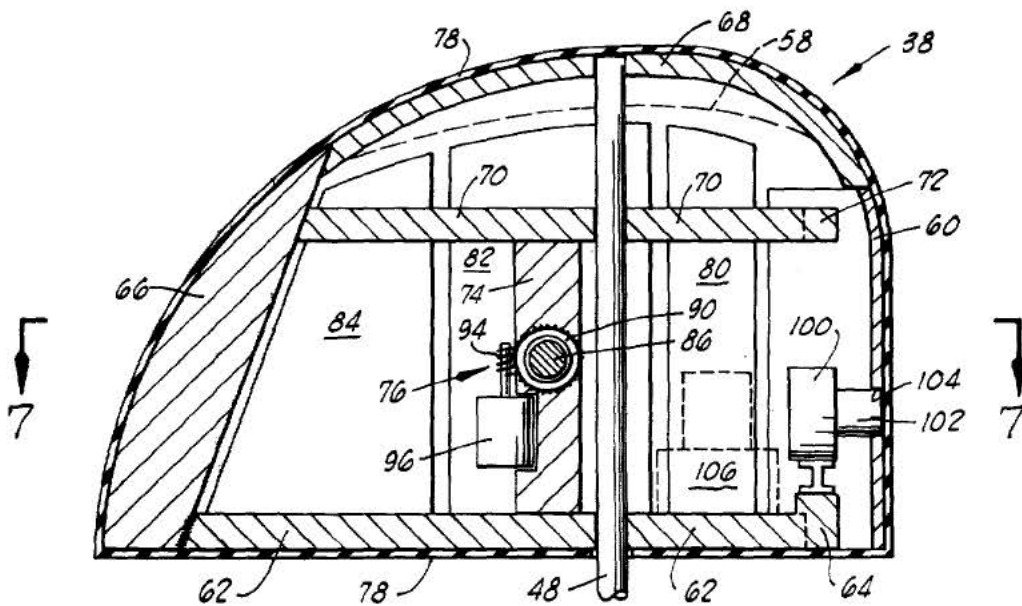


FIG. 6

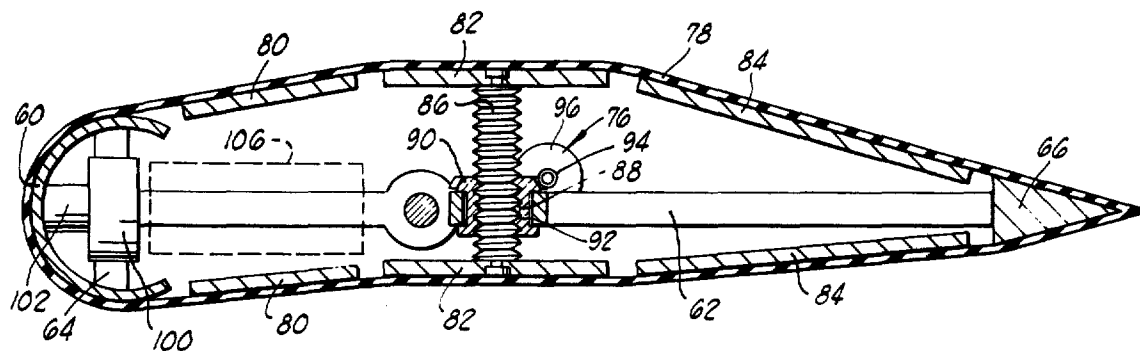


FIG. 7

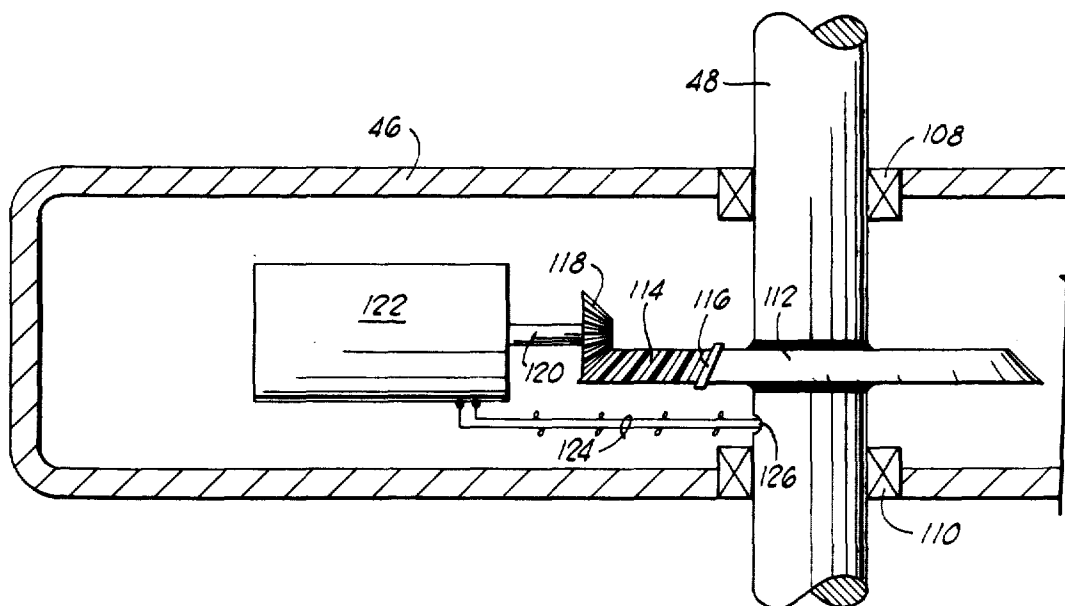


FIG. 8

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