

Ex. PGS 1037



United States Patent [19]

Chien

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[45] Date of Patent: **Jan. 4, 2000**

[54] **CONTROL AND MONITORING OF DEVICES EXTERNAL TO A MARINE SEISMIC STREAMER**

4,967,400 10/1990 Woods 367/21
5,058,080 10/1991 Siems et al. 367/79
5,631,874 5/1997 Mastin et al. 367/15

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[57] **ABSTRACT**

[21] Appl. No.: **09/044,740**

A technique and a system provide control and monitoring of devices external to a marine seismic streamer by segmenting the conductor to which the external devices are coupled. The module which connects sections of the seismic data telemetry cable is modified to include a switch. The switch is controlled by a command signal on the seismic data telemetry cable to segment the twisted pair bus into a plurality of dedicated busses, each dedicated to a subset of the external devices, such as one or two such devices. In this way, the external devices can be communicated with in parallel, rather than in series as in conventional systems.

[22] Filed: **Mar. 19, 1998**

[51] **Int. Cl.⁷** **G01V 1/22**

[52] **U.S. Cl.** **367/21; 367/76; 181/110**

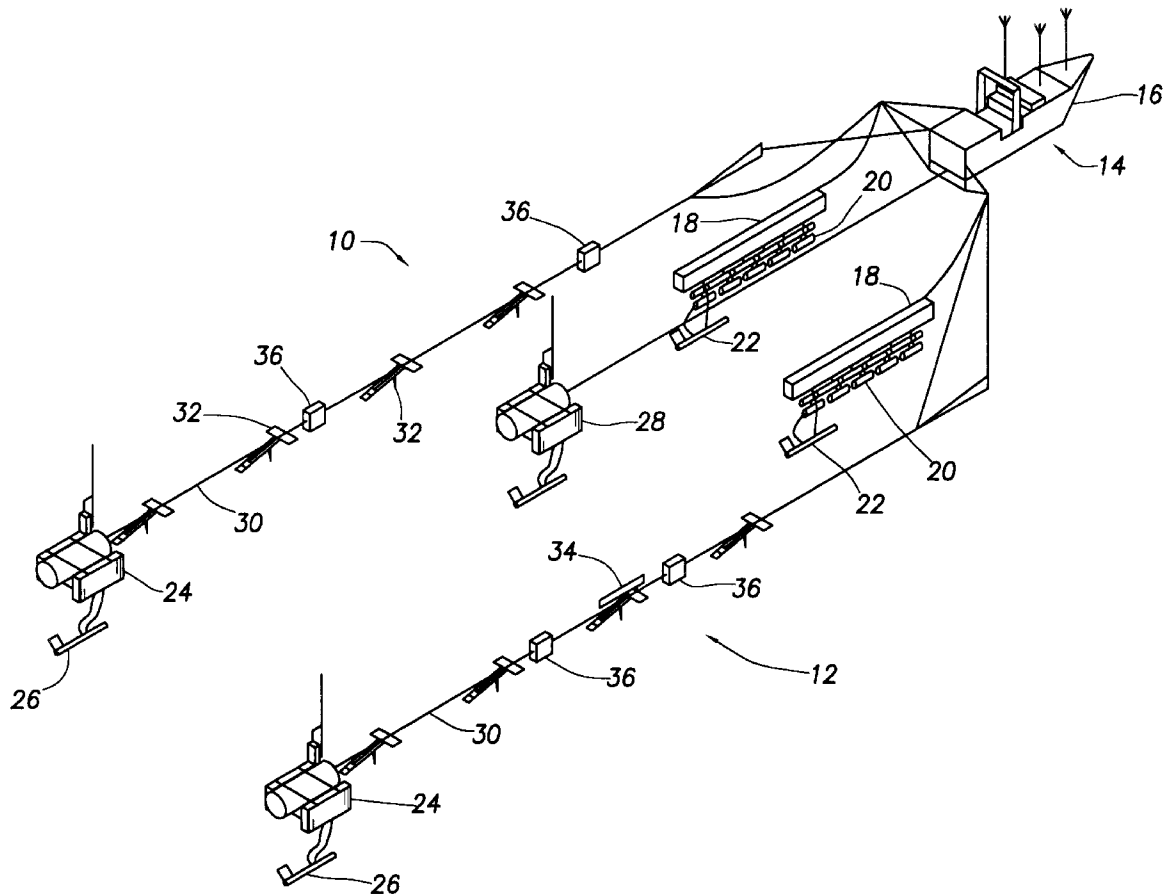
[58] **Field of Search** 367/15, 16, 76, 367/21, 79, 78, 18, 20, 80; 340/854.1; 181/110, 112

[56] **References Cited**

U.S. PATENT DOCUMENTS

4,709,355 11/1987 Woods et al. 367/16

18 Claims, 4 Drawing Sheets



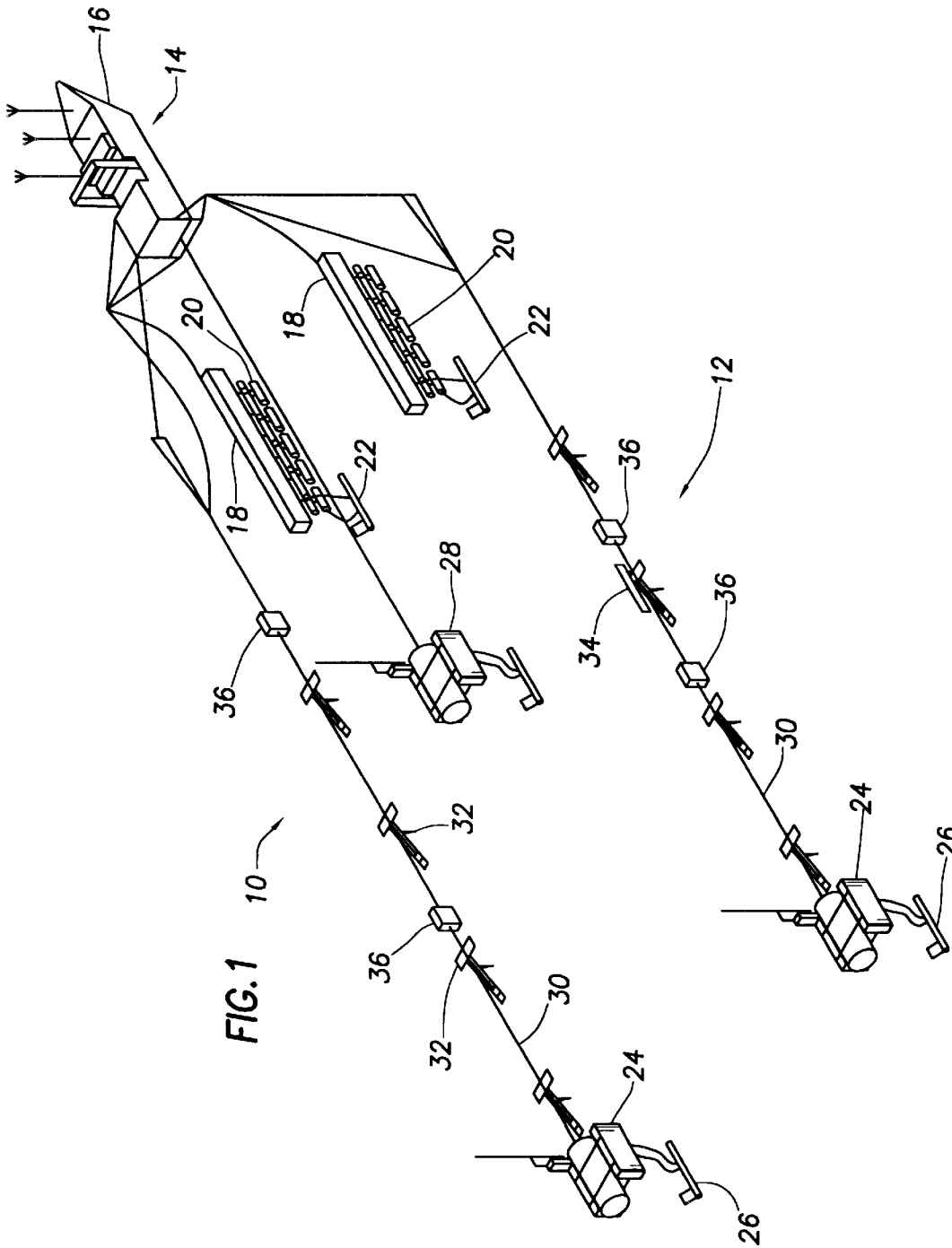


FIG. 1

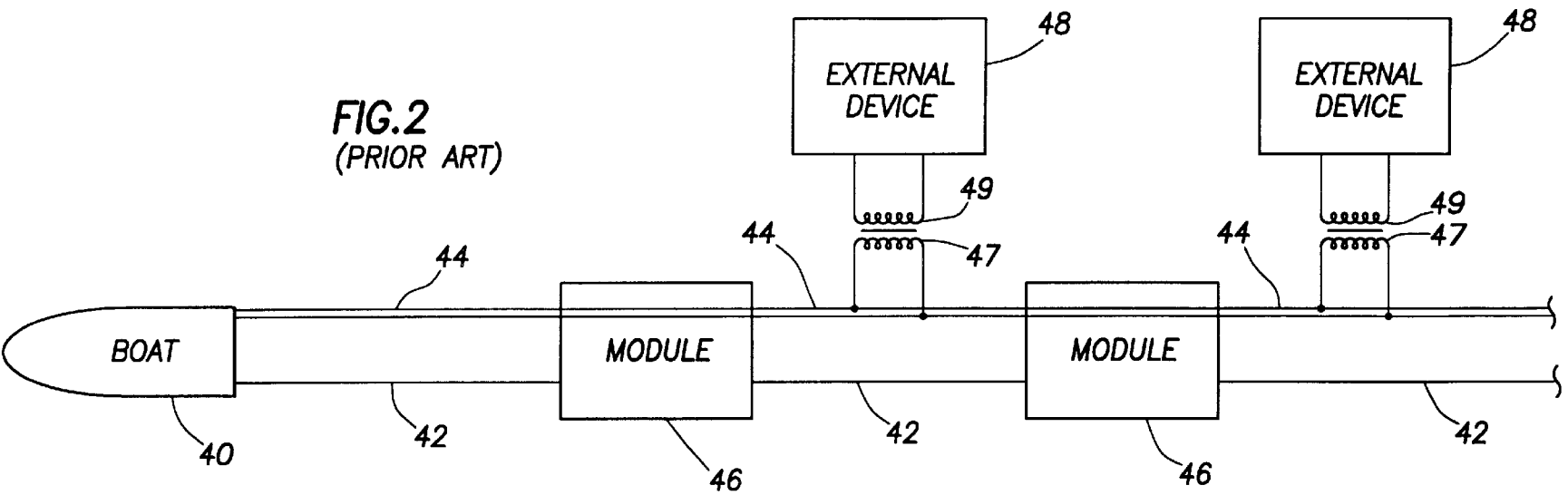


FIG.2
(PRIOR ART)

FIG. 3
(PRIOR ART)

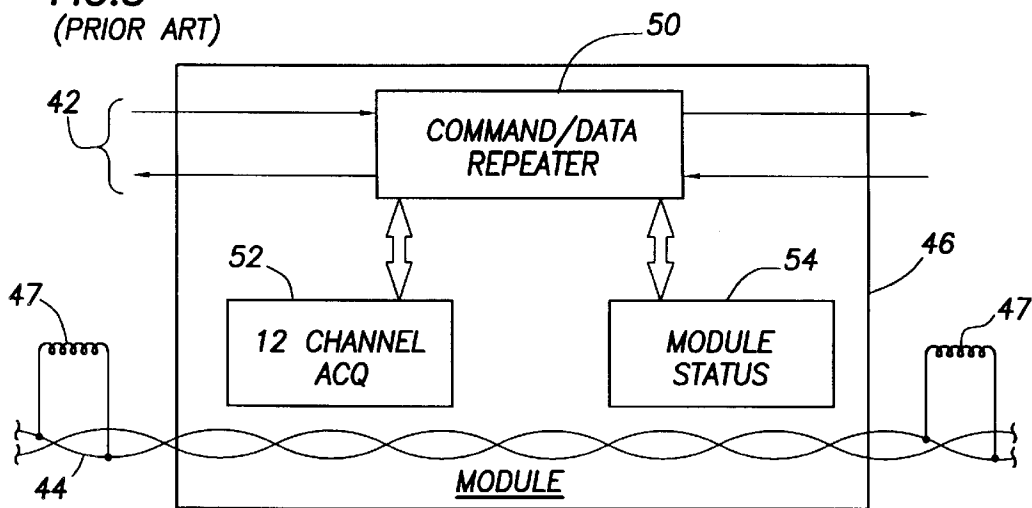
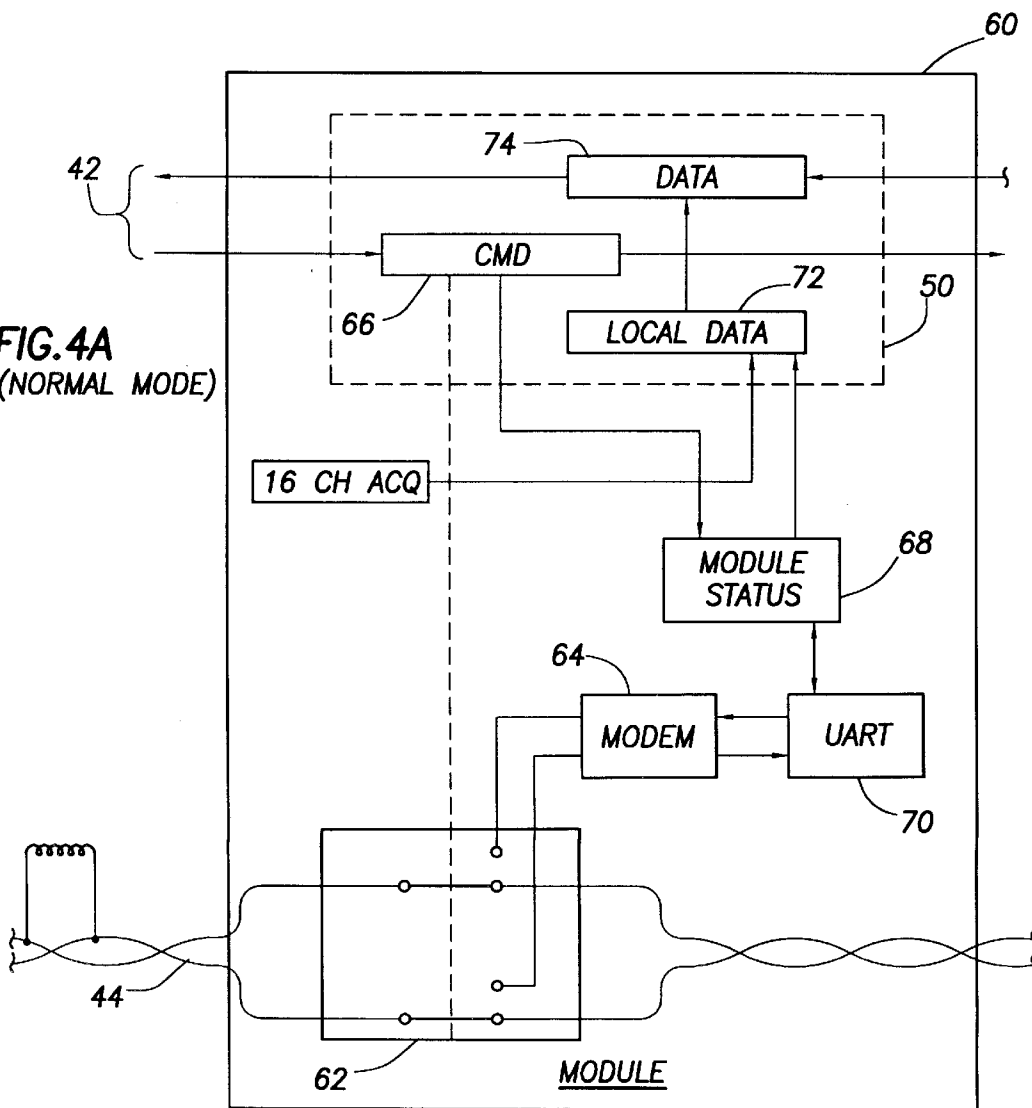


FIG. 4A
(NORMAL MODE)



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