

# Ex. PGS 1053



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(12) **United States Patent**  
**Hillesund et al.**

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(54) **CONTROL SYSTEM FOR POSITIONING OF  
 MARINE SEISMIC STREAMERS**

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\* cited by examiner

(\*) Notice: Subject to any disclaimer, the term of this  
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§ 371 (c)(1),

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(51) **Int. Cl.**<sup>7</sup> ..... **B63B 21/66**

(52) **U.S. Cl.** ..... **114/244; 114/253**

(58) **Field of Search** ..... 114/242, 244–246,  
 114/253, 162, 163

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**ABSTRACT**

A method of controlling a streamer positioning device (18) configured to be attached to a marine seismic streamer (12) and towed by seismic survey vessel (10) and having a wing and a wing motor for changing the orientation of the wing. The method includes the steps of: obtaining an estimated velocity of the streamer positioning device, calculating a desired change in the orientation of the wing using the estimated velocity of the streamer positioning device, and actuating the wing motor to produce the desired change in the orientation of the wing. The invention also involves an apparatus for controlling a streamer positioning device including means for obtaining an estimated velocity of the streamer positioning device, means for calculating a desired change in the orientation of the wing using the estimated velocity of the streamer positioning device, and means for actuating the wing motor to produce the desired change in the orientation of the wing.

**26 Claims, 3 Drawing Sheets**

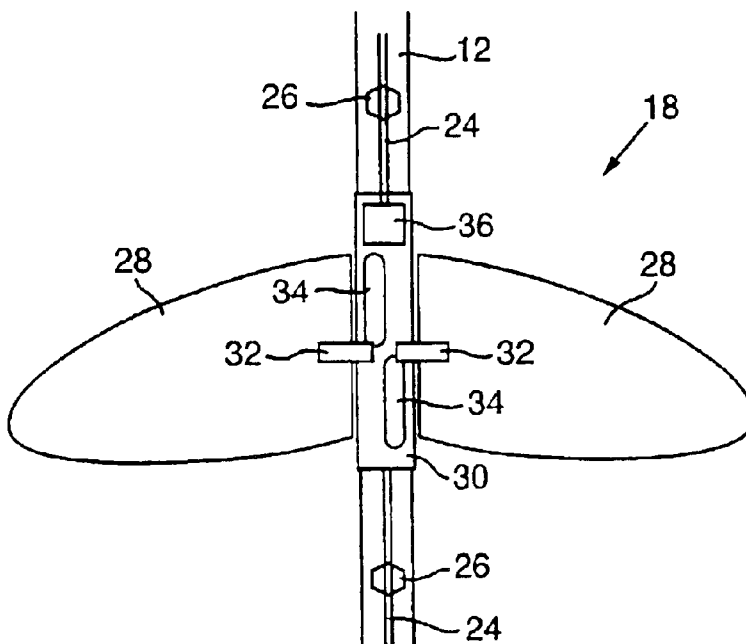


Fig. 1.

Prior Art

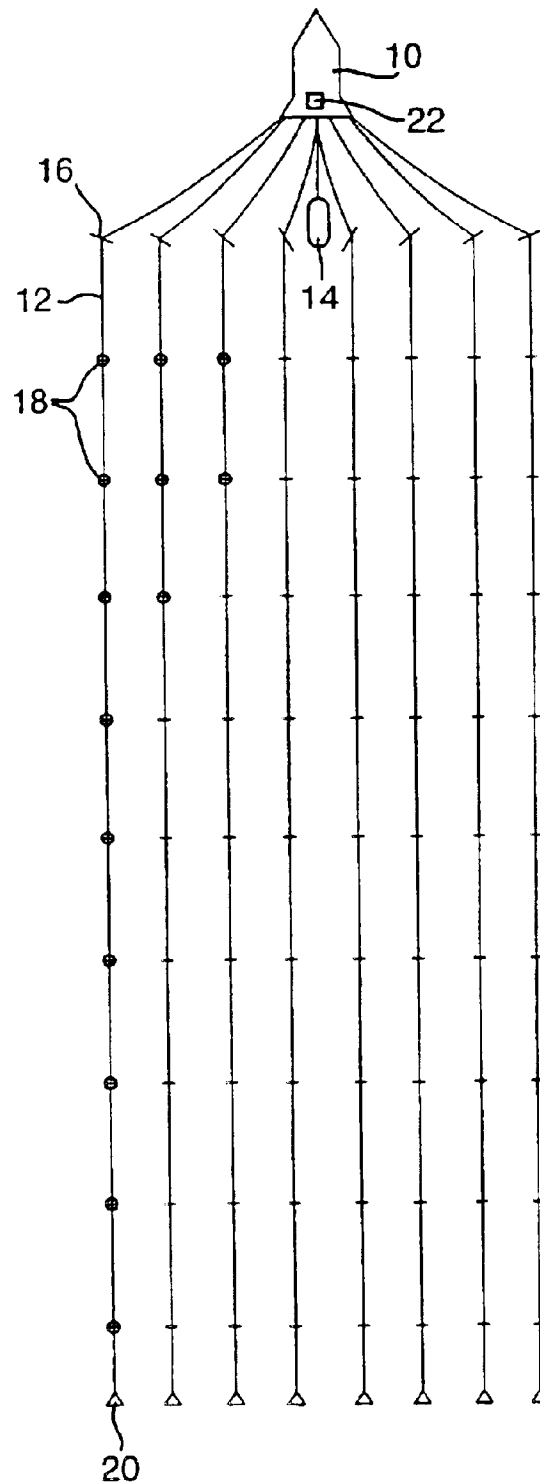


Fig.2.

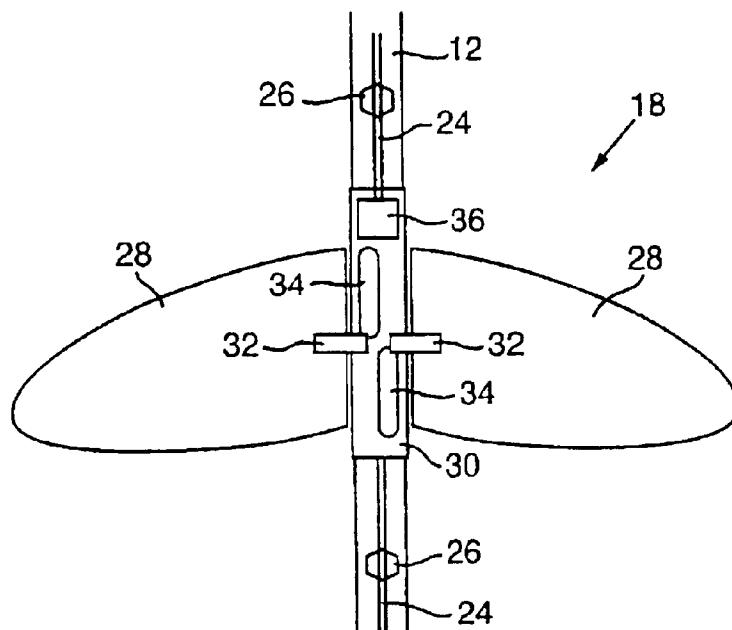
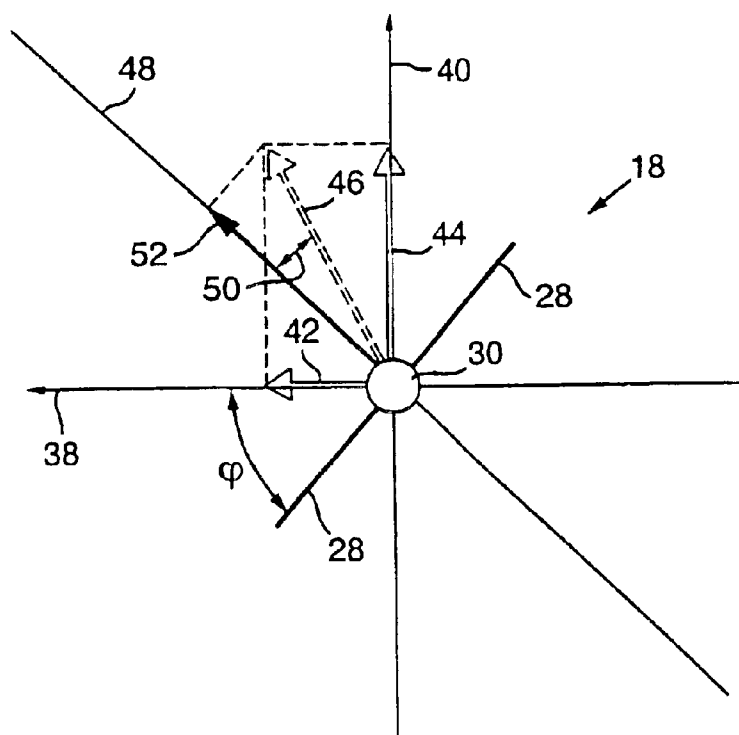
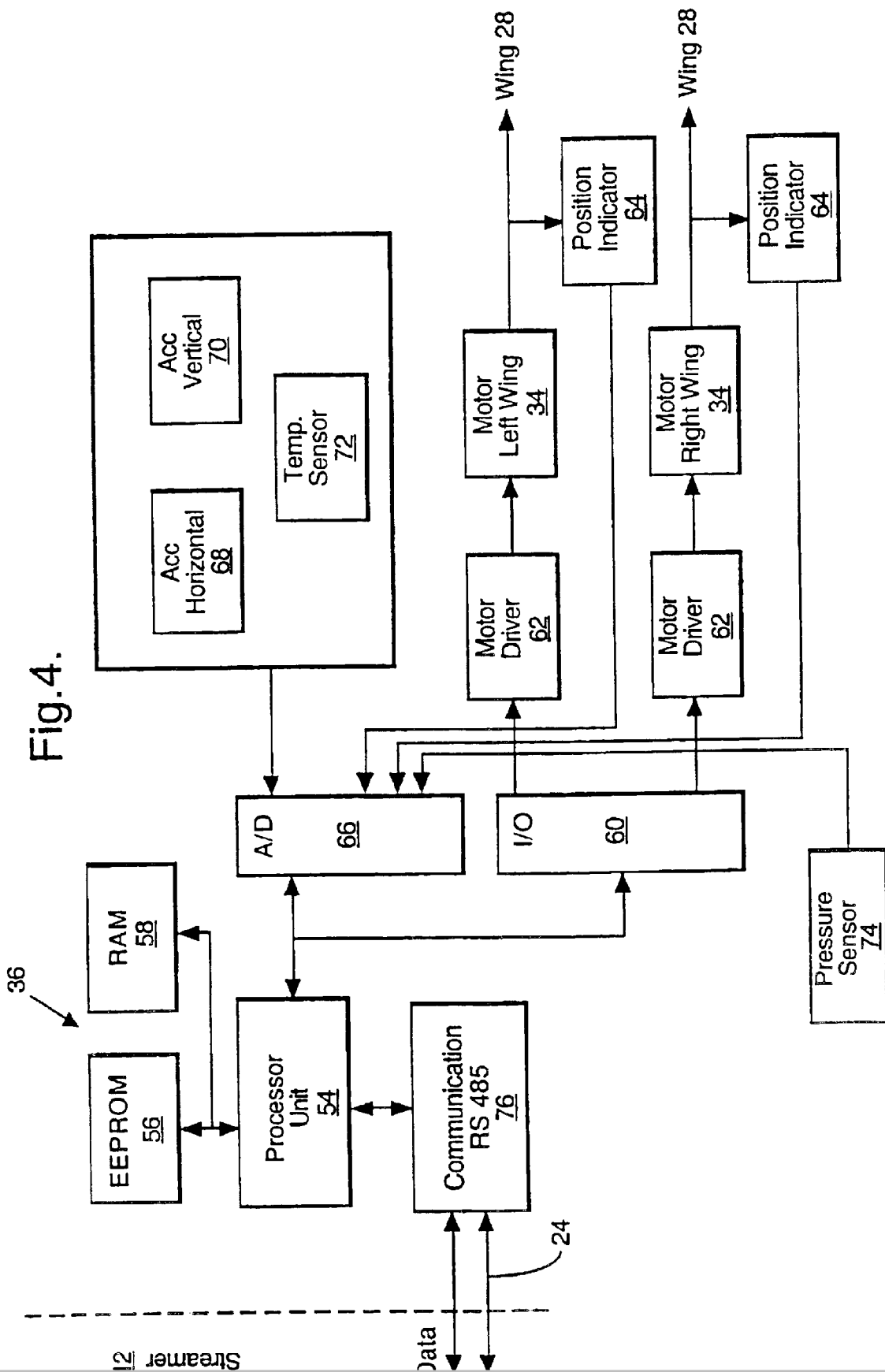


Fig.3.





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