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**Boucher et al.**

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(54) **FAN BEAM TRANSDUCER ASSEMBLY**

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(73) Assignee: **Airmar Technology Corporation**, Milford, NH (US)

(\* ) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 384 days.

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(51) **Int. Cl.**  
**G01S 3/80** (2006.01)

(52) **U.S. Cl.** ..... **367/173**

(58) **Field of Classification Search** ..... **367/173,**  
**367/140, 138, 88, 111**

See application file for complete search history.

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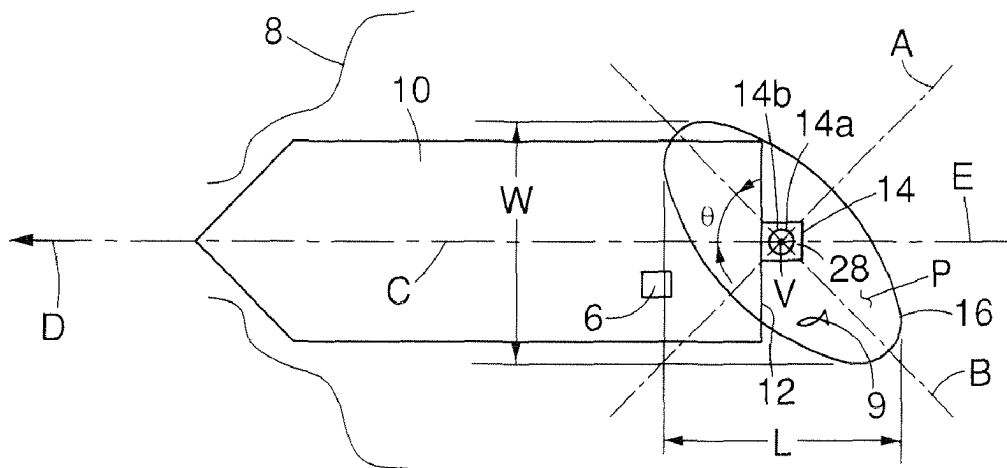
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(57) **ABSTRACT**

A transducer assembly including a fan beam transducer having a beam generation axis for generating a fan shaped acoustic beam along the beam generation axis. The fan shaped acoustic beam can have a generally elliptical cross sectional shape with a major axis and a minor axis across a plane generally perpendicular to the beam generation axis. The transducer can be housed in a housing and have a direction of travel axis. The fan shaped acoustic beam can be rotatable relative to the direction of travel axis. The housing can have a release locking arrangement for rotationally releasing and locking the position of the fan shaped acoustic beam for orienting at least one of the major axis and minor axis of the fan shaped acoustic beam at a desired position relative to the direction of travel axis.

**46 Claims, 21 Drawing Sheets**



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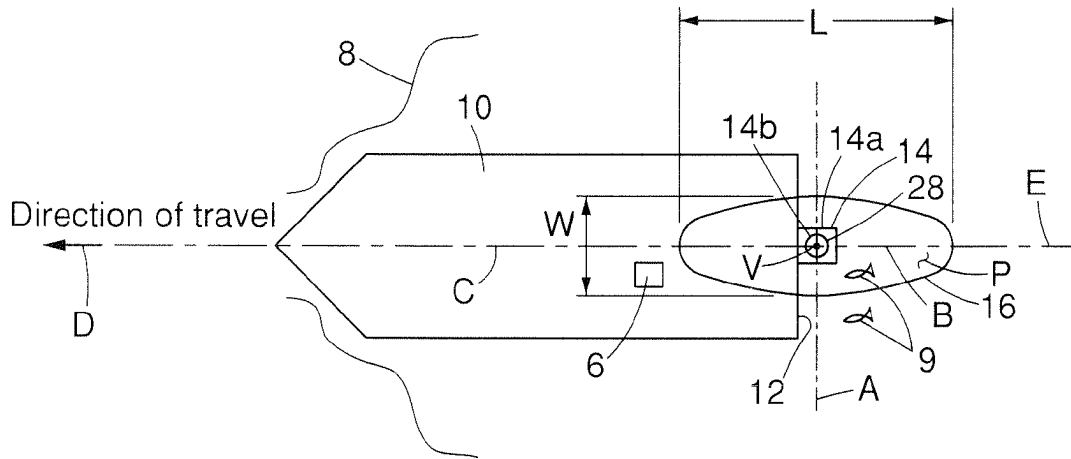


FIG. 1

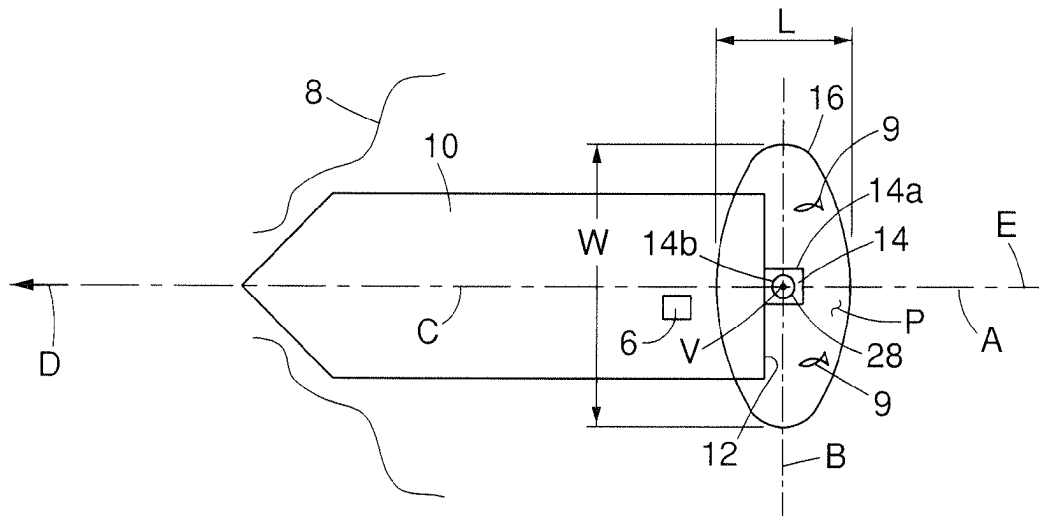


FIG. 2

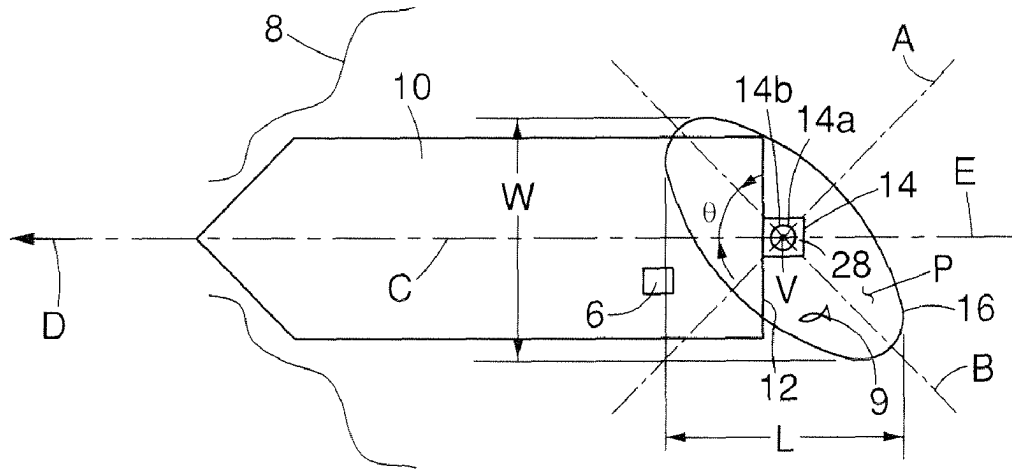


FIG. 3

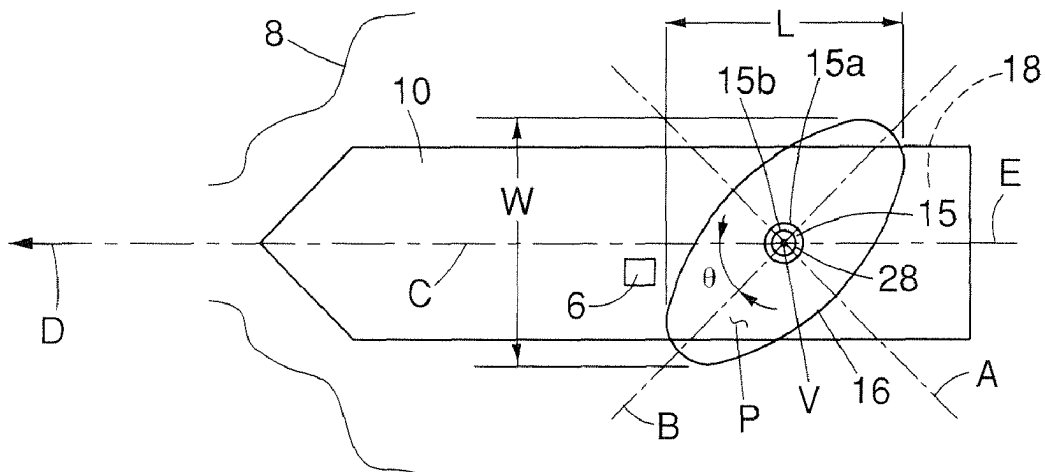


FIG. 4

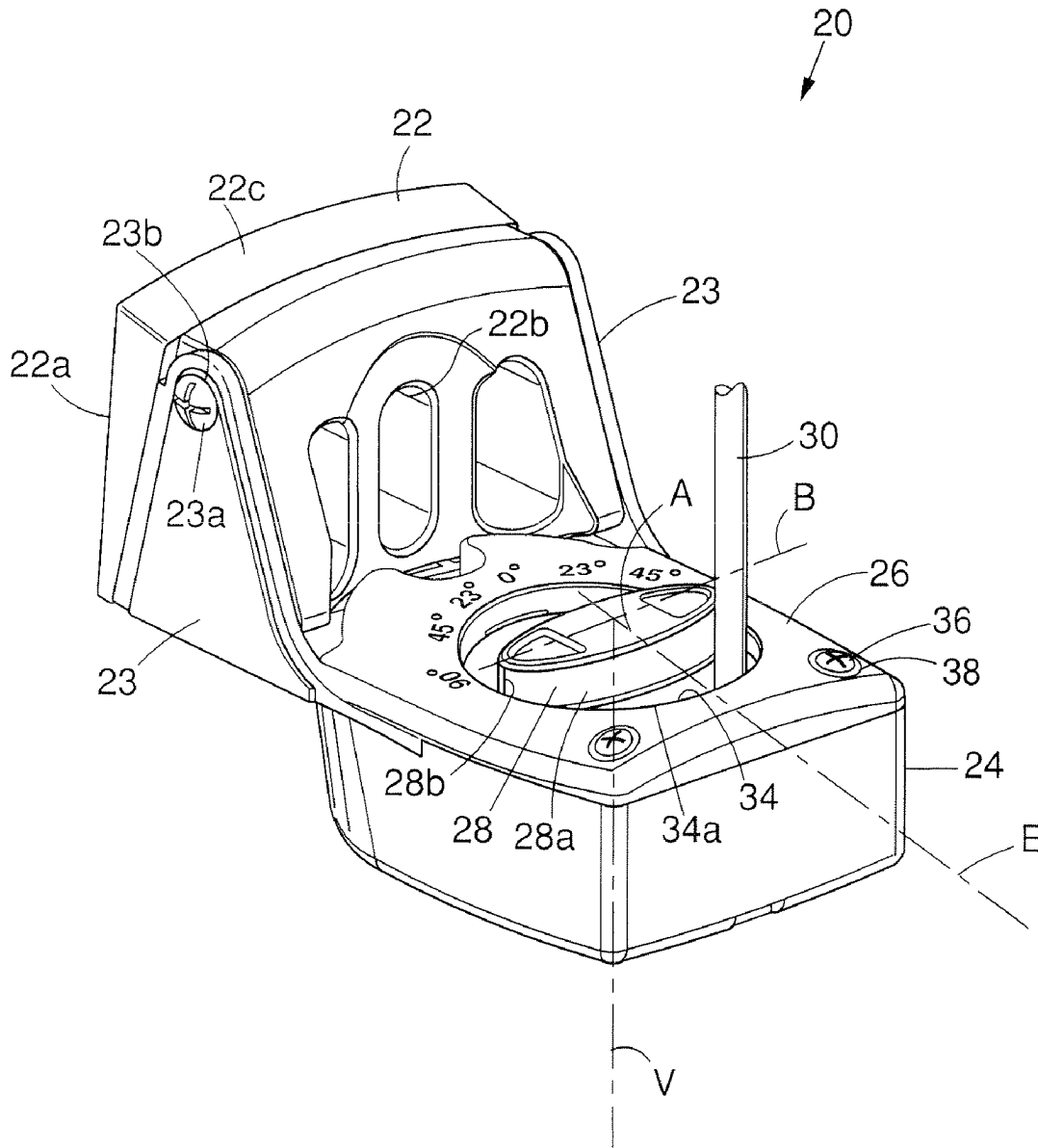


FIG. 5

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