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[54] **INVERSE BEAMFORMING SONAR SYSTEM AND METHOD**

[75] Inventors: **James Donald**, Pawcatuck; **Albert H. Nuttall**, Old Lyme, both of Conn.; **James H. Wilson**, San Clemente, Calif.

[73] Assignee: **The United States of America as represented by the Secretary of the Navy**, Washington, D.C.

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[52] U.S. Cl. **367/124; 367/118; 367/119; 367/901**

[58] Field of Search **367/124, 901, 118, 119**

[56] **References Cited**

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Primary Examiner—Daniel T. Pihulic
Attorney, Agent, or Firm—Michael J. McGowan; Prithvi C. Lall; Michael F. Oglo

[57] **ABSTRACT**

An apparatus and method for detecting, processing, and tracking sonar signals is provided. Plane wave energy from the sonar signal source is measured at multiple points using an array of plane wave energy receptors. These measurements are processed using an inverse beamformer to generate output beam levels. These output beam levels are then processed using the spectrum normalizer to yield spatially and spectrally normalized output beam levels. The normalized beam levels are then processed using an eight nearest-neighbor peak-picker to provide plane wave peaks. Finally, the plane wave peaks are processed by a three-dimensional M of N tracker to identify peaks within a specified limit of frequency and angle change over time. The identified peaks may be displaced or recorded for further analysis.

7 Claims, 4 Drawing Sheets

