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(12) **United States Patent**  
**Carbonell et al.**(10) **Patent No.:** **US 9,207,217 B2**  
(45) **Date of Patent:** **Dec. 8, 2015**(54) **ACCESS HOLE COVER ULTRASONIC  
INSPECTION TOOLING**(56) **References Cited**(71) Applicant: **WESTINGHOUSE ELECTRIC  
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(51) **Int. Cl.**(57) **ABSTRACT****G01N 29/265** (2006.01)**G21C 17/003** (2006.01)**G01N 29/22** (2006.01)(52) **U.S. Cl.**CPC ..... **G01N 29/221** (2013.01); **G01N 29/227**  
(2013.01); **G01N 29/265** (2013.01); **G01N**  
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See application file for complete search history.

This invention relates generally to ultrasonic inspection of welds and more particularly, to apparatus and methods for ultrasonic inspection of welds on access hole covers found in boiling water reactors having jet pumps. The apparatus includes a base, a center frame coupled to the base and projecting vertically relative to the access hole cover, a radial arm structured to rotate on the center frame and having attached thereto a first pneumatic linear thruster and a second pneumatic linear thruster, and a skew motor assembly and transducer are attached to the first pneumatic linear thruster for scanning the access hole cover weld. The skew motor assembly is structured to control the angle of the transducer and the first pneumatic linear thruster is structured to raise and lower the transducer.

**12 Claims, 6 Drawing Sheets**