



US007647973B2

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

(10) **Patent No.:** **US 7,647,973 B2**
(45) **Date of Patent:** **Jan. 19, 2010**

(54) **COLLAPSE ARRESTOR TOOL**

(75) Inventors: **Marc Minassian**, LaPorte, TX (US);
Robert K. Voss, Houston, TX (US);
Kevin G. Buckle, Tipperty By Ellon
(GB); **Steven P. Fenton**, Balmedie (GB)

(73) Assignee: **Vetco Gray Inc.**, Houston, TX (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 429 days.

6,390,194 B1 *	5/2002	Young et al.	166/250.08
6,962,206 B2 *	11/2005	Hirth et al.	166/387
6,966,381 B2 *	11/2005	Stjernstrom et al.	166/337
2003/0000693 A1 *	1/2003	Couren et al.	166/66
2004/0200614 A1 *	10/2004	Stjernstrom et al.	166/250.08
2005/0082066 A1 *	4/2005	McGuire et al.	166/379
2007/0215348 A1 *	9/2007	Corre et al.	166/264

* cited by examiner

(21) Appl. No.: **11/488,747**

(22) Filed: **Jul. 18, 2006**

(65) **Prior Publication Data**

US 2008/0017383 A1 Jan. 24, 2008

(51) **Int. Cl.**
E21B 41/04 (2006.01)

(52) **U.S. Cl.** **166/338**; 166/336; 166/339;
166/368; 166/250.17; 166/250.08

(58) **Field of Classification Search** 166/338,
166/336, 339, 368, 250.08, 337, 250.17,
166/88.1, 89.1, 138

See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

4,559,809 A * 12/1985 Mayo 73/40.5 R

Primary Examiner—Thomas A Beach
Assistant Examiner—Matthew R Buck
(74) *Attorney, Agent, or Firm*—Bracewell & Giuliani

(57) **ABSTRACT**

A tool is employed with a subsea wellhead assembly for preventing the collapse of a wear bushing located in a drill-through tubular member due to external test forces being applied to it. The tool has a connector that connects to the drill-through tubular member. A stem extends downward from the connector and has a reacting member at its lower end. The reacting member engages an inner diameter of the wear bushing to resist inwardly directed forces due to fluid pressure on the exterior of the wear bushing. The tool can be incorporated with a running tool or with a blowout preventer isolation test tool.

21 Claims, 6 Drawing Sheets

