

[54] **MULTIPLE TUBING HANGER TIE BACK SYSTEM AND METHOD**

[75] Inventors: Frank C. Adamek, Pasadena; James V. Bonds; Charles D. Bridges, both of Houston, all of Tex.

[73] Assignee: Gray Tool Company, Houston, Tex.

[21] Appl. No.: 544,143

[22] Filed: Oct. 21, 1983

[51] Int. Cl.³ E21B 33/04; E21B 29/00

[52] U.S. Cl. 166/382; 166/55; 166/75 R

[58] Field of Search 166/55, 75 R, 82, 115, 166/116, 243, 297, 363, 364, 368, 382, 361

[56] **References Cited**

U.S. PATENT DOCUMENTS

3,692,107	9/1972	Slator et al.	166/55
3,720,260	3/1973	Duck et al.	166/361
4,043,389	8/1977	Cobb	166/55
4,420,042	12/1983	Tunstall	166/297

Primary Examiner—Stephen J. Novosad
 Assistant Examiner—Bruce M. Kisliuk
 Attorney, Agent, or Firm—L. James Ristas

[57] **ABSTRACT**

A multiple tubing hanger tie back arrangement is disclosed in a preferred embodiment associated with a

shear ram tubing head system (10). The arrangement includes a lower tubing hanger (44) sealingly secured within a lower tubing head (28) for supporting a tubing string (22). The lower hanger includes a control shoulder (60) at its upper end and a tapered interior surface (62). An upper tubing hanger (70) spaced above the lower hanger is also sealingly secured within an upper tubing head (24). A tie back subassembly (90) connects the upper and lower hangers, and preferably includes a tubing member (94) and a spacer member (92). The spacer member includes a stab nipple (96) in interference engagement with the lower hanger interior surface (62), and a load transfer surface (98) abutting the control shoulder (60). The tubing member (94) is located in the bore of the shear ram (26) so that severance of the tubing member (94) does not disturb the production tubing string (22) supported by the lower hanger (44). After severance, the tie back stub can be readily removed. A method of installation is also disclosed, including the steps of adjusting the distance between the upper hanger (70) and load transfer surface (98) to match the critical distance between the upper hanger bowl (38) and lower hanger control shoulder (60), so that the installed tie back assembly maintains pressure and mechanical continuity through the stack (30).

13 Claims, 6 Drawing Figures

