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Rutledge, Sr. et al.

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(54) **METHOD OF ASSEMBLING SUCKER RODS AND END FITTINGS**

(75) Inventors: **Russell P. Rutledge, Sr.**, Big Spring, TX (US); **Russell P. Rutledge, Jr.**, Big Spring, TX (US); **Richard D. Burchett**, Coahoma, TX (US); **Floyd L. Brownfield**, Big Spring, TX (US)

(73) Assignee: **Fiberod, Inc.**, Morton Grove, IL (US)

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F16B 12/04 (2006.01)
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(58) **Field of Classification Search** 156/91, 156/153, 157, 158, 242, 244.11, 244.13, 156/244.24, 278, 281, 289, 293, 294, 296, 156/303.1, 304.1, 304.2, 304.3, 304.6, 307.1, 156/307.3, 307.5, 307.7; 403/265, 267, 268, 403/269, 345, 361

See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

3,168,340 A	2/1965	Howard	
4,315,699 A	2/1982	Lusk	
4,360,288 A	11/1982	Rutledge et al.	
4,401,396 A *	8/1983	McKay	403/13
4,430,018 A *	2/1984	Fischer	403/268
4,475,839 A	10/1984	Strandberg	
4,563,391 A *	1/1986	Tanner et al.	428/365
4,597,688 A *	7/1986	Pagan	403/265
4,662,774 A	5/1987	Morrow	
RE32,865 E	2/1989	Rutledge et al.	
4,822,201 A	4/1989	Iwasaki et al.	
4,919,560 A	4/1990	Rutledge et al.	

(Continued)

OTHER PUBLICATIONS

U.S. Patent & Trademark Office, Office Action in U.S. Appl. No. 11/715,088 (Dec. 30, 2010).

Primary Examiner — Philip C Tucker

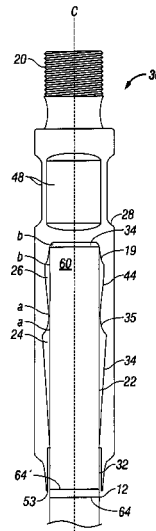
Assistant Examiner — Brian R Slawski

(74) *Attorney, Agent, or Firm* — Leydig, Voit & Mayer, Ltd.

(57) **ABSTRACT**

An improved design and a method of assembly of end fittings to sucker rods which may be of conventional length or continuous sucker rods is described herein. The end fittings and rods are assembled so as to form wedges which enhance the connectability of the end fitting to the rod, and further, the wedge or wedges approach the rod asymptotically so as to avoid any abrupt discontinuities in the wedge or wedges thus substantially eliminating stress concentration areas and potential failure areas in the rod. The assembly method provides for integrity in the rod to end fitting assembly to promote longer connection life and fewer shop rejections and field failures.

12 Claims, 4 Drawing Sheets



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U.S. PATENT DOCUMENTS									
5,088,638	A *	2/1992	Karaev et al.	228/112.1	6,886,484	B2 *	5/2005	Thomas	114/108
5,253,946	A	10/1993	Watkins		2005/0000689	A1 *	1/2005	Peleanu et al.	166/279
6,193,431	B1 *	2/2001	Rutledge	403/268	2008/0217023	A1	9/2008	Rutledge	

* cited by examiner

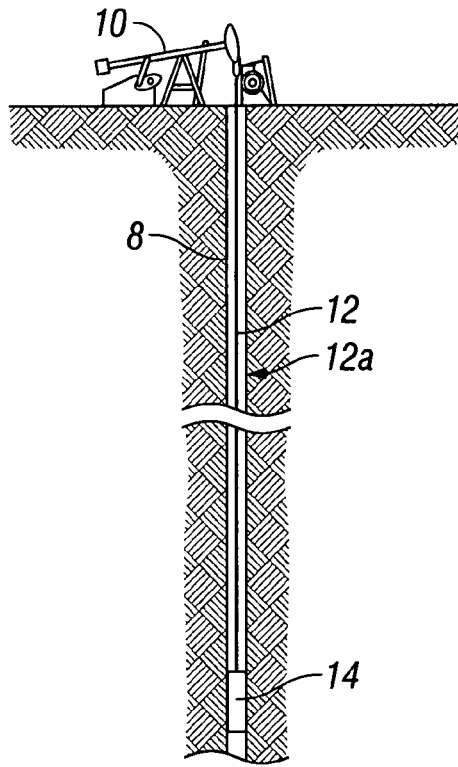


FIG. 1

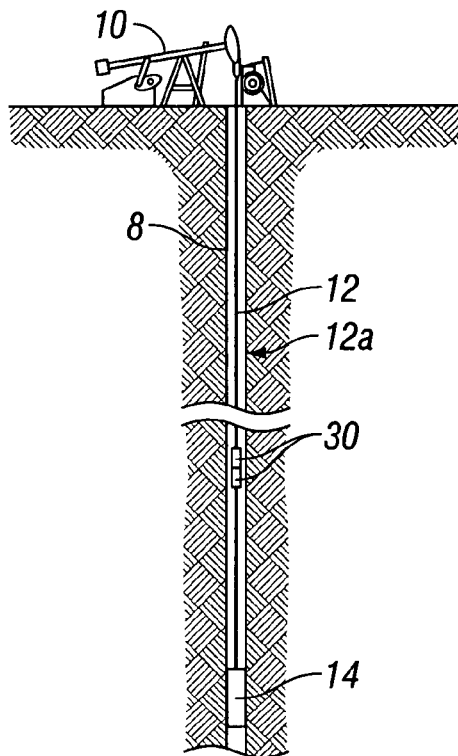


FIG. 1A

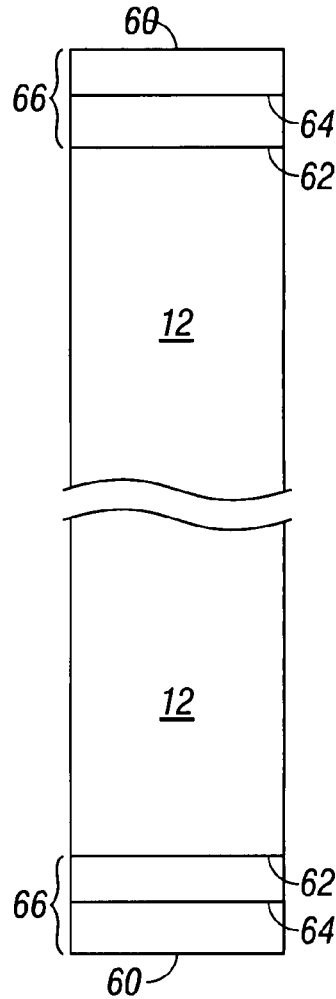
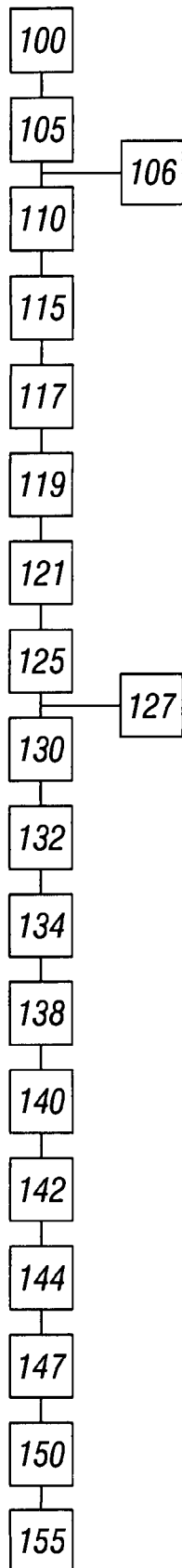


FIG. 3

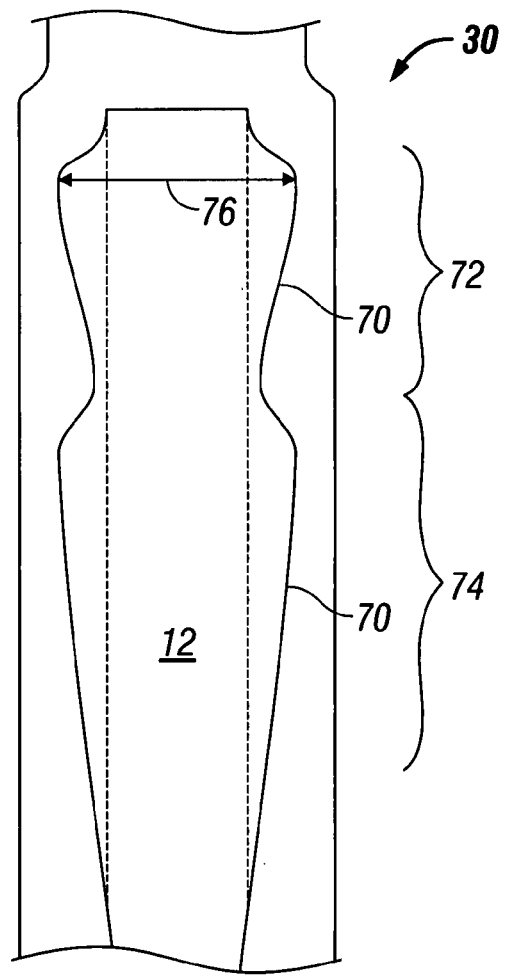
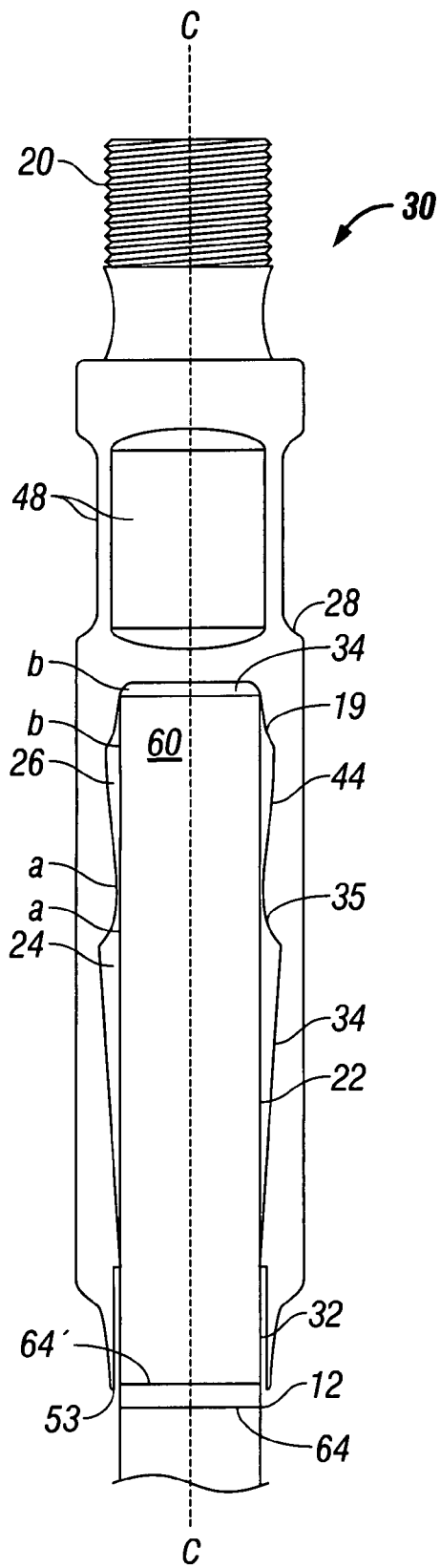


FIG. 4A

FIG. 4

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