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(12) **United States Patent**  
**Rutledge, Sr.**

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(45) **Date of Patent:** **Jun. 8, 2010**

(54) **CONTINUOUS SUCKER ROD AND METHOD OF USING SAME**

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(\*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 217 days.

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(57) **ABSTRACT**

(21) Appl. No.: **11/715,085**

A continuous sucker rod preferably comprising fiberglass or composite material for use in an well is described herein. The continuous sucker rod may be connected at one end to a pump drive, via a polished rod, and at a second end to a downhole pump, via sinker bars or other weights. The continuous sucker rod preferably has at least two end fittings, one at each end of the continuous sucker rod. The end fittings, each having two ends and each being attached, at one end, to a respective end of the continuous sucker rod. The end fittings are preferably configured to enable connection to the polished rod and sinker bars respectively. The end fittings are connected to the continuous sucker rod 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.

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(65) **Prior Publication Data**

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(51) **Int. Cl.**  
**E21B 43/00** (2006.01)

(52) **U.S. Cl.** ..... **166/68**; 166/105; 166/369;  
166/242.6; 403/268

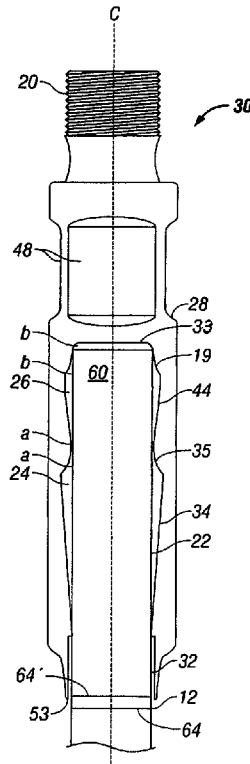
(58) **Field of Classification Search** ..... 166/369,  
166/68, 105, 242.6; 403/268  
See application file for complete search history.

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**13 Claims, 4 Drawing Sheets**



Petitioners' Exhibit 1014

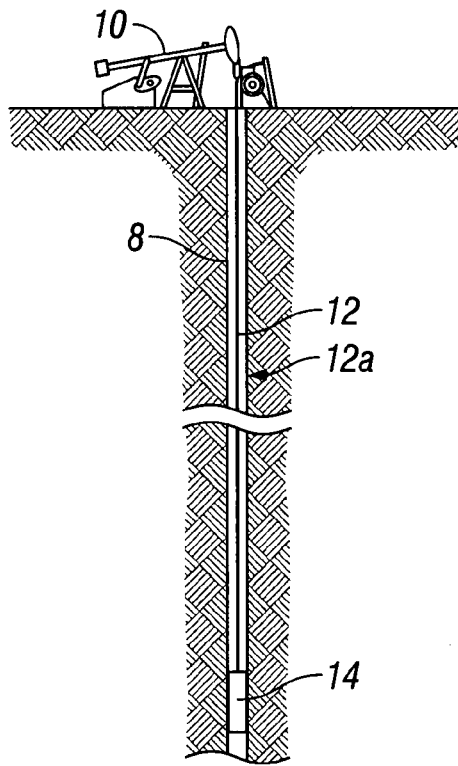


FIG. 1

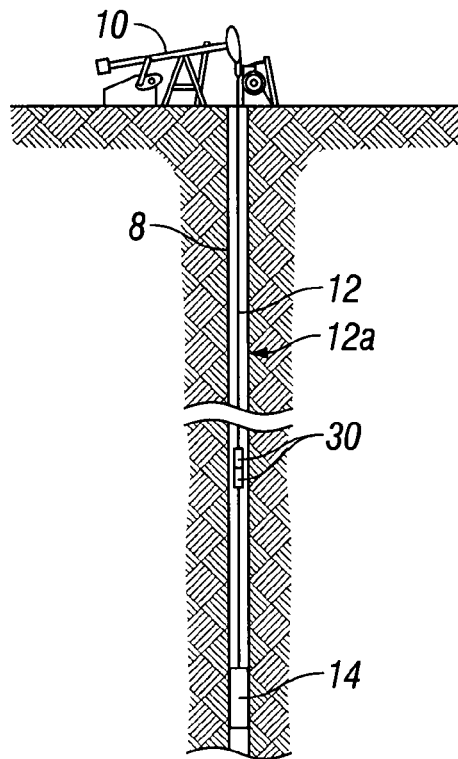


FIG. 1A

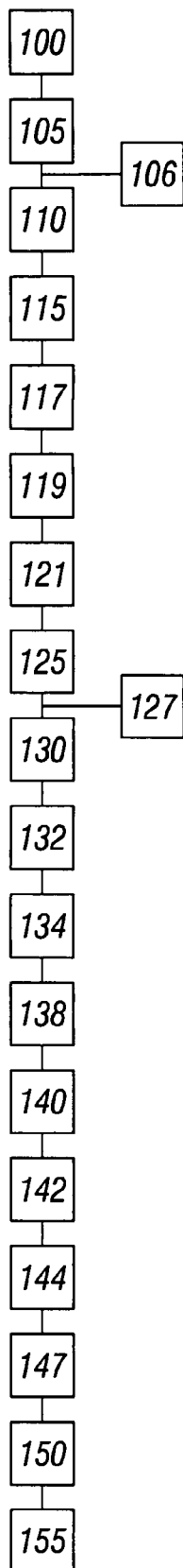


FIG. 2

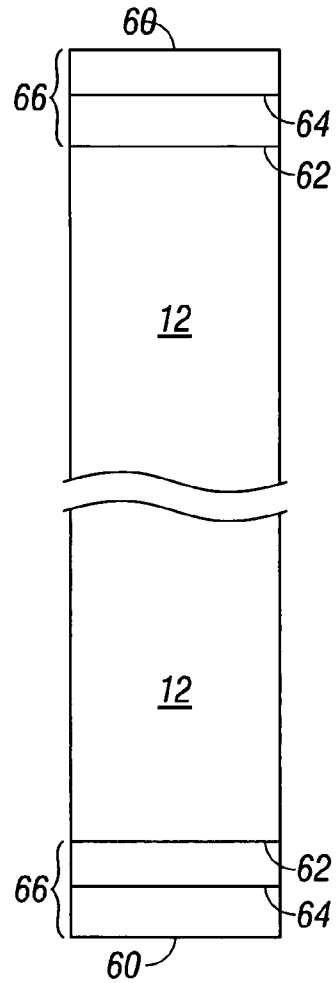


FIG. 3

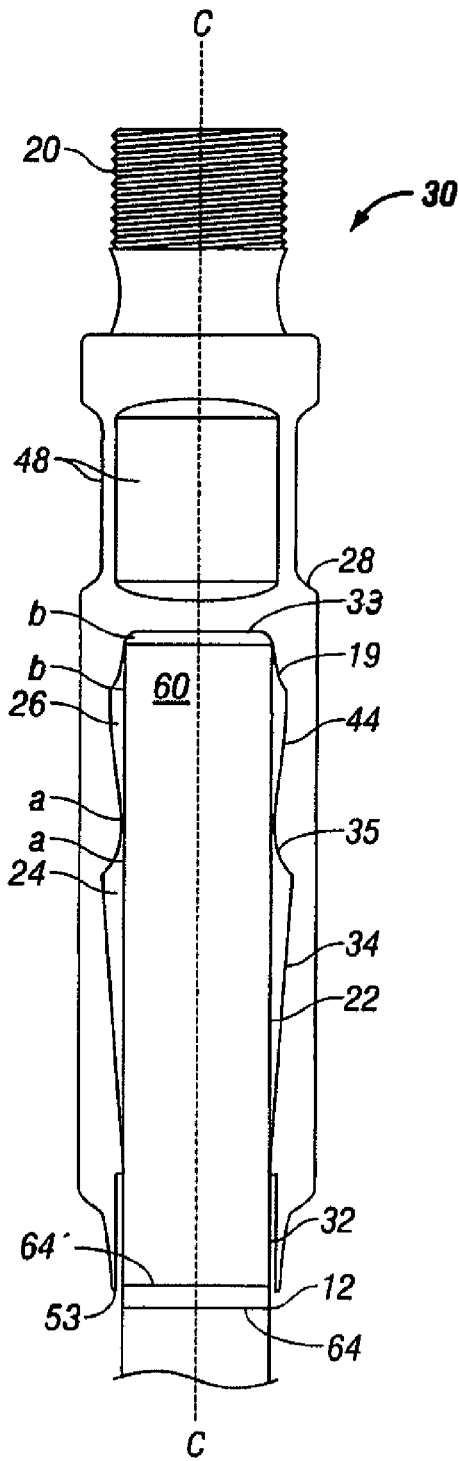


FIG. 4

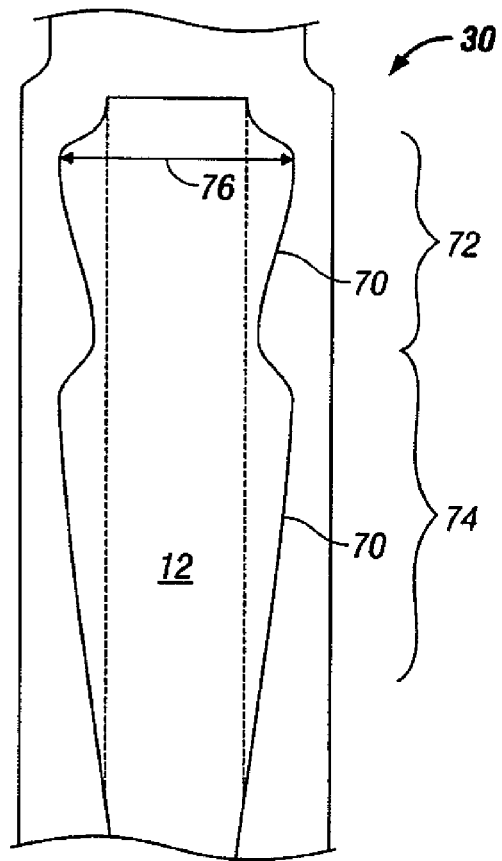
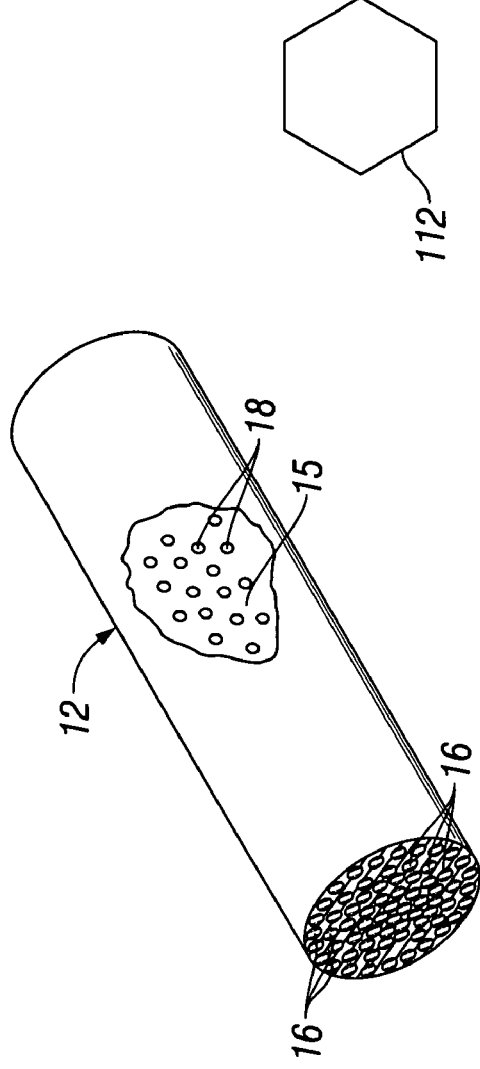
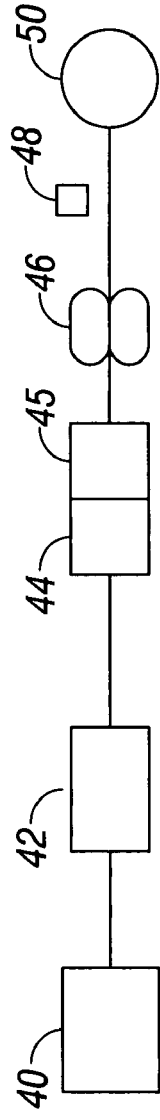


FIG. 4A



**FIG. 5**

**FIG. 5A**



**FIG. 6**

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