

[54] **TENSION LEG JOINT**

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[58] **Field of Search** 403/321, 322, 326, 11;
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[56] **References Cited**

U.S. PATENT DOCUMENTS

3,071,188	1/1963	Raulins	285/23
3,448,799	6/1969	Ahlstone	166/346
3,452,815	7/1969	Watkins	166/344
4,045,054	8/1977	Arnold	285/18
4,451,056	5/1984	Galle, Jr.	285/3
4,459,931	7/1984	Glidden	405/224 X
4,611,953	9/1986	Owens	405/224
4,643,466	2/1987	Conner	285/321
4,651,818	3/1987	Johnson	166/115
4,664,558	5/1987	De Meio	285/18 X

FOREIGN PATENT DOCUMENTS

0654535 11/1964 Belgium 285/321
 0417673 2/1974 U.S.S.R. 285/321

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[57] **ABSTRACT**

An improved tension leg joint with a first or receptacle member having an opening to receive the second or tension leg member end, the first member opening includes an internal recess including an upper downwardly facing shoulder and a lower shoulder, the second member end includes a latching element carried on a lower upwardly facing shoulder of the second member and normally biased outward so that it moves into the internal recess of the first member when the second member end is inserted therein sufficiently far so that the latching element moves past the downwardly facing shoulder, and a release sleeve movable within the first member recess and having means for releasably engaging the latching element when it is moved into the interior of the release sleeve subsequent lifting of the second member and its latching element causes the release sleeve to be raised to engage the downwardly facing recess shoulder and allow the latching element to pass thereby in its upward movement without coming into latching engagement therewith.

8 Claims, 12 Drawing Sheets

