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[Continued on nextpage]

(54) Title: PIPE HANDLING APPARATUS WITH ARM STIFFENING

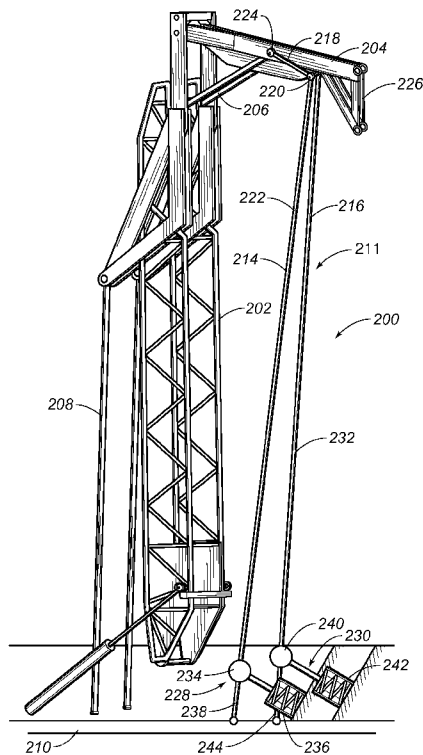


FIG. 10

(57) **Abstract:** A pipe handling apparatus (10) has a supporting structure (16), an arm (24) pivotally interconnected to the supporting structure (16) such that the supporting structure (16) and the arm (24) are movable between a first position and a second position within a single degree of freedom, and a stiffener cooperative with the arm (24) when the arm (24) and the supporting structure (16) are in the second position. The stiffener applies a mechanical resistance to the arm (24) in the second position. The second position is at an end of the travel of the supporting structure (16) and the arm (24). The stiffener applies a variable resistance to the arm (24) as the arm (24) moves from the first position to the second position. This variable resistance is at its greatest when the arm (24) is in the second position.

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B. FIELDS SEARCHED

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Korean utility models and applications for utility models

Japanese utility models and applications for utility models

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Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKOMPASS(KIPO internal) & Keywords pipe, handling, stiffen

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No
A	US 5458454 A (SOROKAN; RONALD S.) 17 October 1995 See the whole document.	1-20
A	US 4407629 A (WILLIS; CLYDE A.) 04 October 1983 See the whole document.	1-20
A	US 5671932 A (CHAPMAN; LEONARD T.) 30 September 1997 See the whole document.	1-20
A	US 4276918 A (SIGOUIN; ROGER) 07 July 1981 See the whole document.	1-20

 Further documents are listed in the continuation of Box C See patent family annex

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Information on patent family members

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