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- (72) **Inventor; and**
- (71) **Applicant : SCOTT, Kelly W.** [US/US]; 201 E. 368th  
Road, Dunnegan, Missouri 65640 (US).
- (74) **Agents: PATTERSON, B. Todd** et al.; Patterson &  
Sheridan, L.L.P., 3040 Post Oak Blvd., Suite 1500, Hous-  
ton, Texas 77056-6582 (US).

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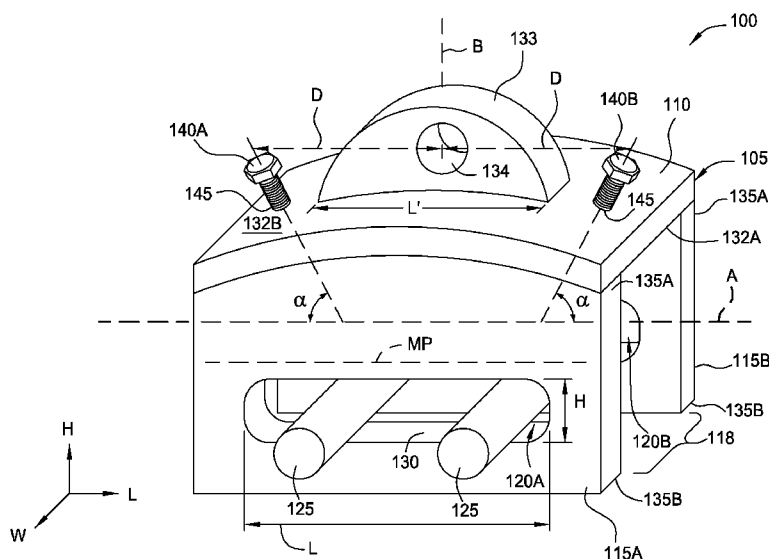


FIG. 1

- (54) Title:** APPARATUS AND METHODS FOR FLANGE SUPPORT AND ALIGNMENT

- (57) Abstract:** A method and apparatus for supporting and aligning a flange is provided. In one embodiment, an apparatus for supporting a flange is provided. The apparatus includes a first member having a first surface and a second surface, a first side member extending orthogonally from the first surface of the first member, a second side member extending orthogonally from the first surface of the first member in a spaced apart relation to the first side member to define a U-shaped structure, wherein each of the first side member and the second side member include an aperture formed therein along a longitudinal axis of the U-shaped structure, a lifting lug coupled to the second surface of the first member in a transverse axis of the U-shaped structure, and a plurality of set screws disposed through the first member on opposing sides of the lifting lug.

## INTERNATIONAL SEARCH REPORT

International application No.  
**PCT/US2012/033945****A. CLASSIFICATION OF SUBJECT MATTER*****B25B 11/02(2006.01)i, B25B 27/00(2006.01)i, F16L 23/00(2006.01)i***

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

B25B 11/02; B25B 27/14; B25B 1/00; B23P 19/00

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean utility models and applications for utility models

Japanese utility models and applications for utility models

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

eKOMPASS(KIPO internal) &amp; Keywords:pipe, alignment, flange, couple

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

| Category* | Citation of document, with indication, where appropriate, of the relevant passages                                        | Relevant to claim No. |
|-----------|---------------------------------------------------------------------------------------------------------------------------|-----------------------|
| Y         | US 04052045A A (SHADDIX; BILLY JOE) 04 October 1977<br>See abstract, column 3 lines 4 - column 4 line 15 and figures 1-2. | 1-21                  |
| Y         | US 05228181A A (INGLE; MICHAEL D.) 20 July 1993<br>See abstract, column 3 lines 1-25 and figures 1-6.                     | 1-21                  |
| A         | US 05094435A A (DEPPERMAN; WARREN B. et al.) 10 March 1992<br>See abstract, column 3 lines 12-36 and figures 1-4.         | 1-21                  |
| A         | US 03920232A A (CLARK JULIUS) 18 November 1975<br>See abstract, column 2 lines 11-38 and figures 1-4.                     | 1-21                  |



Further documents are listed in the continuation of Box C.



See patent family annex.

\* Special categories of cited documents:

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US 04052045A A

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US 05228181A A

20.07. 1993

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None