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R. C. MASON

CASING JOINING DEVICE

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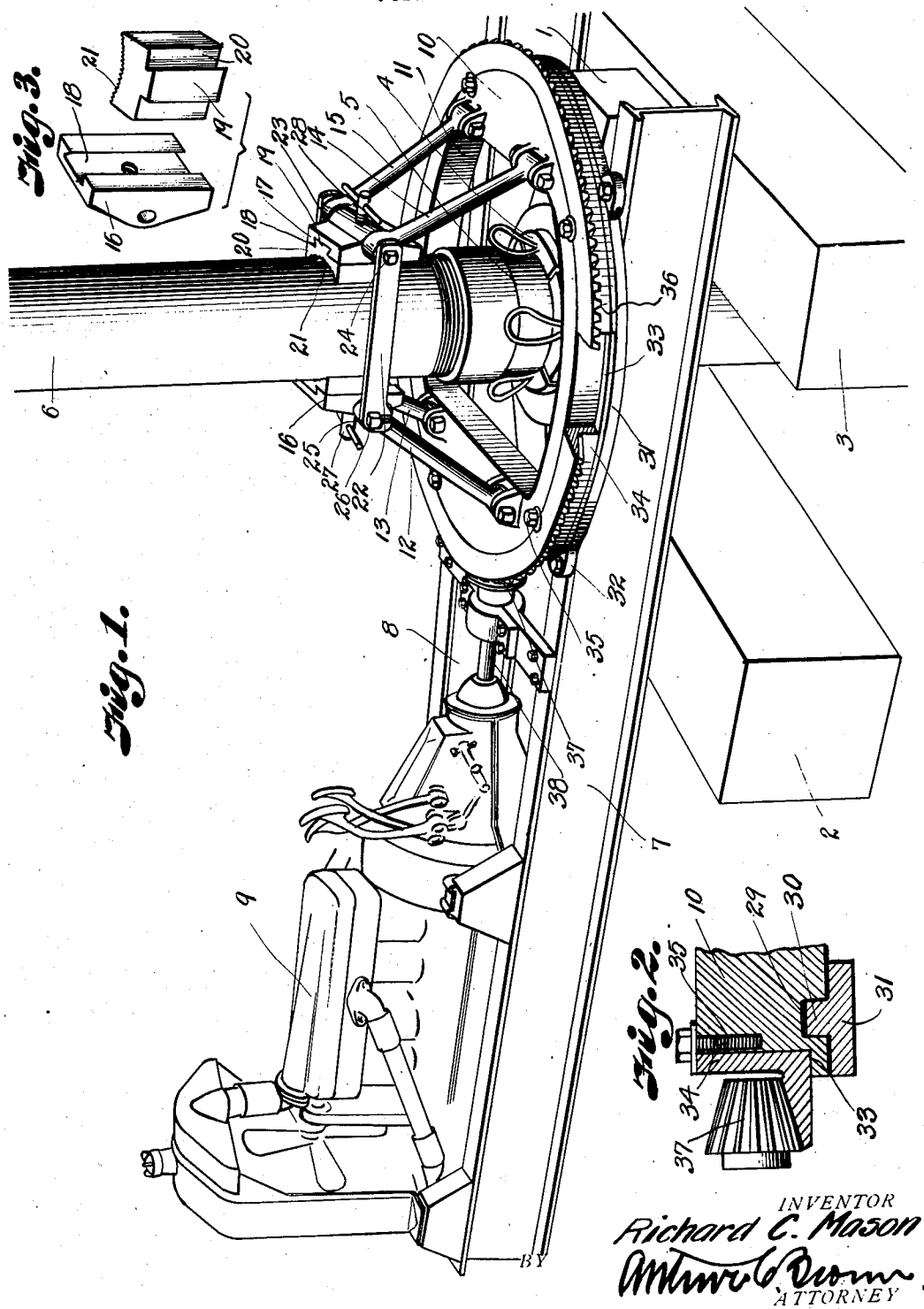


Fig. 1.

Fig. 3.

Fig. 2.

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CASING-JOINING DEVICE.

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To all whom it may concern:

Be it known that I, RICHARD C. MASON, a citizen of the United States, residing at Tulsa, in the county of Tulsa and State of Oklahoma, have invented certain new and useful Improvements in Casing-Joining Devices; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

This invention relates to a casing joining device and the primary object thereof is to provide a novel form of casing joining device which may be used for screwing sections of oil well casing one to the other and the invention is applicable for use in unscrewing the sections.

Another important feature of the invention is to provide means whereby a conventional prime mover may be used in a convenient way for providing the necessary power and for the purpose of illustration I have shown the prime mover as an ordinary standard motor vehicle engine on account of the relatively low cost of the prime mover, facility with which it may be installed and its ease of operation, although I do not wish to be limited in all cases to the use of this particular type of motor.

The novel features of my invention will be apparent by reference to the following description in connection with the accompanying drawings, in which

Fig. 1 is a perspective view of a casing joining device constructed in accordance with my invention.

Fig. 2 is a fragmentary section through the turn table, through the ring gear connected thereto and the pinion in mesh with the ring gear, and

Fig. 3 is a fragmentary disassociated view of one of the casing clamping jaws and one of the slips therefor.

Referring now to the drawings by numerals of reference, 1 designates the usual spider supported from the sills 2 and 3. The spider may carry the usual slips 4 to hold the casing 5 so that a new casing section 6 can be screwed thereinto. All of this is old construction.

My invention contemplates an easily portable casing joining device and it is illustrated as comprising two sills 7 and 8 connected together by appropriate means and the sills may consist of I-beams. Supported by the sills 7 and 8 is a prime mover 9 shown as a motor vehicle engine. This type of prime mover is recommended on account of it being inexpensive and readily adapted for this particular invention.

The casing can be turned by mechanism which in so far as I know is novel in this particular art. The turning mechanism operated from the prime mover consists of a turn table 10 having a central opening 11 through which the casing may extend. Therefore the turn table is in the form of a ring and it carries pairs of upstanding links. The links are designated 12 and 13 for one pair and 14 and 15 for the other pair. The links are pivoted to the turn table and they are pivotally secured to the jaw members 16 and 17, respectively. Each jaw member is provided with an under cut groove 18 to receive a dove-tailed rib 19 on a slip 20, the slip preferably having a roughened face 21 to engage the casing. The pairs of jaw members are connected by cross links 22 and 23. The links 22 and 23 are shown as carried by the pivot 24 for the jaw 17 and they have slotted ends 25 which engage over the pivots 26 for the jaw 16 as clearly shown in Fig. 1.

Clamping screws 27 and 28 are provided for each jaw member to force the slips into gripping contact with the casing. The slips are slidable in the jaw members so that as the casing is screwed down, the slips may follow with it in the jaws. The turn table is provided with an annular groove 29 to receive an annular guide rib 30 on the base ring 31 which carries ears 32 by means of which the base ring may be fastened to the I-beams 7 and 8.

The periphery of the turn table is provided with a shoulder 33 to receive the ring gear 34 which may be slipped over the periphery of the turn table and it may be fastened thereto by screws 35 which engage recesses in the ring gear and in the turn table so as to hold the turn table and ring gear rigidly one to the other.

The teeth 36 of the ring gear mesh with the teeth of a pinion 37 on the drive shaft 38 of the prime mover 9. Therefore when the rod shaft is turned the turn table will

be turned to screw the tubing section into the one immediately below it as will be apparent by reference to Fig. 1.

The ring gear is reversible. When it is in the position shown in Fig. 1, the turn table will be turned to screw on the tubing section and when the ring gear is in the position shown in Fig. 2, the turn table will be turned in a reverse direction to unscrew the casing section.

When it is desired to reverse the ring gear 34 the bolts which pass through the ears 32 may be removed and the turn table may be slipped away from the pinion 37 so that the ring gear 34 can be removed. After reversal the turn table can be moved back into position to mesh the pinion with the ring gear.

It will be apparent that the entire casing joining device may be easily transported and placed in position to screw on the casing sections, one after the other or it may be used for unscrewing them in case the casing is being "pulled."

It will also be apparent that the device is simple, rugged and easily operated and while I have specifically described the exact details of construction, I do not wish to be limited to the precise construction shown as changes may suggest themselves from time to time which will not depart from the actual spirit of the invention.

What I claim and desire to secure by Letters-Patent is:—

1. A casing joining device comprising a turn table, links pivoted to the turn table, jaw members supported by pairs of links, and slips carried by the jaw members for engagement with oil well casing sections, said slips having free longitudinal movement in the jaw members.

2. A casing joining device comprising a turn table, links pivoted to the turn table, jaw members supported by pairs of links, and slips carried by the jaw members for engagement with oil well casing sections, said slips having free longitudinal movement in the jaw members, and link members connecting one pair of links to the links of a complementary pair.

3. A casing joining device comprising a turn table having a central opening through which oil well tubing may extend, links pivoted to the turn table and arranged in pairs at diametrically opposite points on the turn table, a jaw member carried by each pair of links, each jaw member having a longitudinal guide groove casing engaging slips carried by the jaw members and guided into grooves, set screws carried by the jaw members for forcing the slips into engagement with the casing and supplemental links for tying the pairs of first named links together to thereby hold the slips in contact with the casing.

4. A casing joining device comprising a turn table, means on the turn table for engaging oil well casing, a ring gear carried by the turn table and having laterally extending teeth, the ring gear being reversible, means for fastening the ring gear to the turn table including a pinion in mesh with the teeth thereof.

5. In a casing joining device, sills, a prime mover carried by the sills, a turn table rotatably supported on the sills, a reversible ring gear carried by the table, a pinion driven by the prime mover in position to mesh with the teeth of the ring gear in either of its positions and a casing engaging means carried by the turn table.

In testimony whereof I affix my signature.

RICHARD C. MASON.