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M. A. COX ET AL

2,637,528

CARRIER BAR FOR POLISH RODS

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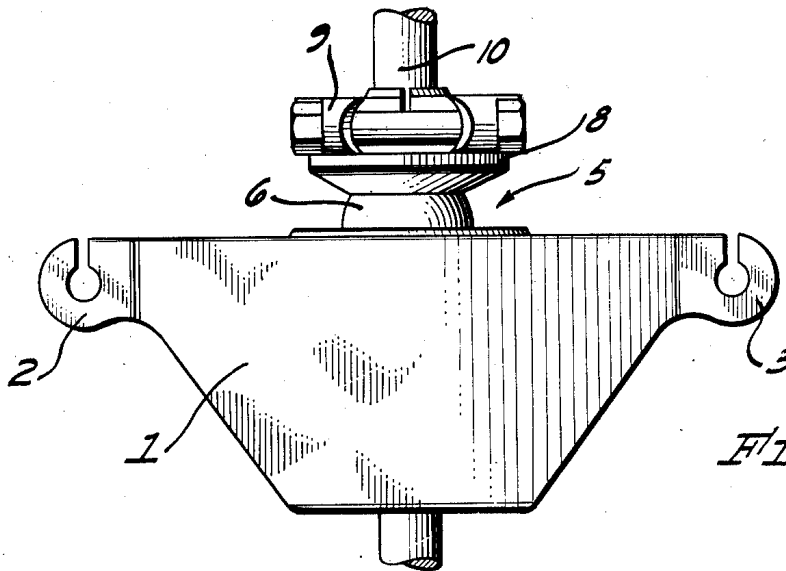


FIG. 1.

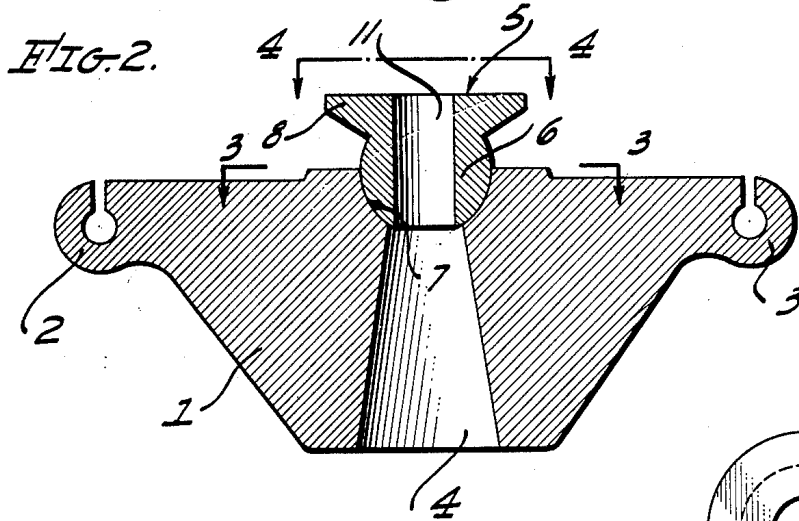


FIG. 2.

FIG. 4.

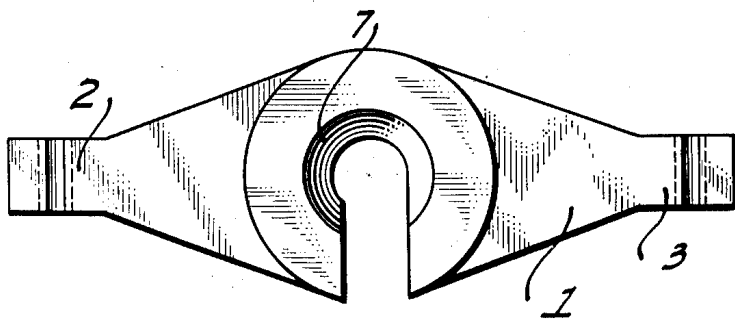
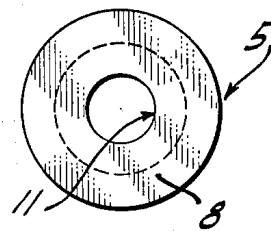


FIG. 3.

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CARRIER BAR FOR POLISH RODS

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2 Claims. (Cl. 255—11)

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In a pumping well the sucker rods which rise from the pump are secured to a polish rod which extends through the stuffing box at the top of the tubing. This polish rod in turn is attached to a carrier bar and the carrier bar is supported in the reins which hang from the pumping beam, all of which is usual and well known.

An object of our invention is to provide a novel carrier bar in which the polish rod can align itself to compensate for mis-alignment of the carrier bar and also to compensate for the small arch of travel in which the carrier bar moves.

Another object of our invention is to provide a novel ball fitting which seats in the carrier bar, the polish rod being mounted on the supporting ball.

Still another object of our invention is to provide a novel means of seating the supporting ball in the top of the carrier bar so that the center of rotation of the carrier ball is either within or very close to the top of the carrier bar.

Still another object of our invention is to provide a novel carrier bar of the character stated, which is simple in construction, effective in operation and which will permit reciprocation of the polish rod without bending or strain in the polish rod.

Other objects, advantages and features of invention may appear from the accompanying drawing, the subjoined detailed description and the appended claims.

In the drawing:

Figure 1 is a side elevation of our novel carrier bar.

Figure 2 is a transverse sectional view of the same.

Figure 3 is a top plan view of the carrier bar as viewed from line 3—3 of Figure 2 and with the supporting ball removed.

Figure 4 is a top plan view of the supporting ball as viewed from line 4—4 of Figure 2.

Referring more particularly to the drawing, the numeral 1 indicates a carrier bar, preferably formed of a single casting or forging, and formed with two ears 2—3, one on each side thereof, these ears are engaged by the reins (not shown) which extend to the reciprocating pumping beam of the apparatus. The method of supporting a carrier bar from the reins of a pumping mechanism is usual and well known and the details of this support form no part of our invention.

A tapered bore 4 extends vertically through the body of the carrier bar 1 and this bore is larger at the bottom than at the top, the pur-

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pose of this flare in the bore will be further described.

A carrier ball 5 consists of a spherical lower portion 6 which seats in the spherical seat 7 in the top of the carrier bar 1. A flange 8 is integrally formed on the top of the ball 6 and the upper face of this flange is flat so that the clamp 9 which clamps on to the polish rod 10 will rest on this flat surface. The polish rod clamp 9 is of usual and well known construction and provides a means of connecting the polish rod to the ball carrier 5. A vertical bore 11 through the carrier ball closely fits the polish rod 10 so that any lateral movement of the polish rod will cause the ball or spherical portion 6 to rock in the seat 7. The flare in the bore 4 permits the polish rod to move laterally within the body of the carrier bar as may be necessary to permit the polish rod to remain in a vertical position relative to the usual stuffing box on the top of the tubing.

It will be evident that any horizontal mis-alignment of the body of the carrier bar will be compensated for by a shifting of the ball 6 in the seat 7.

Similarly, as the carrier bar 1 reciprocates in the pumping of the well, a slight arch in which it moves will cause the ball 6 to rock in the seat 7 and will permit the polish rod 10 to remain substantially vertical and without creating any bending or other stresses in the polish rod.

Having described our invention, we claim:

1. A carrier bar for polish rods comprising a body, a pair of oppositely positioned ears extending from said body by means of which the body is supported, said body having a vertical bore extending therethrough from top to bottom, said bore being tapered outwardly towards the bottom of the body, a hemispherical seat formed in the body and at the upper end of said bore, a carrier ball swivelly mounted in said seat and in alignment with the bore, said carrier ball having a hole extending vertically therethrough and in alignment with said bore, said carrier ball including an integral and outwardly flared flange on the upper end thereof, and the upper face of said flange being flat and of greater diameter than said carrier ball.

2. A carrier bar for polish rods comprising a body, a pair of oppositely positioned ears extending from said body by means of which the body is supported, said body having a vertical bore extending therethrough from top to bottom, said bore being tapered outwardly towards the bottom of the body, a hemispherical seat formed in the

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body and at the upper end of said bore, a carrier ball swivelly mounted in said seat and in alignment with the bore, said carrier ball having a hole extending vertically therethrough and in alignment with said bore, said carrier ball including an integral and outwardly flared flange on the upper end thereof, and the upper face of said flange being flat and of greater diameter than said carrier ball, the polish rod extending vertically through the carrier ball and through said bore in the body, and a clamp encircling the polish rod and resting on top of the flat upper face of the carrier ball said clamp being about

the same diameter as the flat upper face of said flange.

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