Jan. 23, 1934. W. O. BICKERSTAFF 1,944,398

OIL SAVER

Filed April 30, 1931

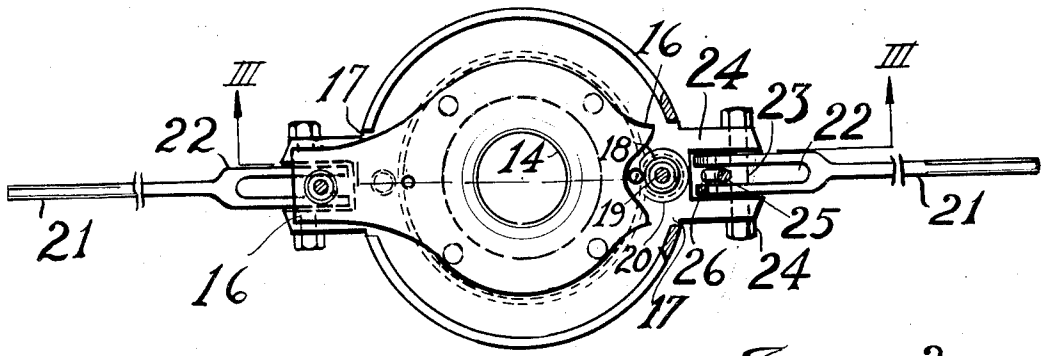
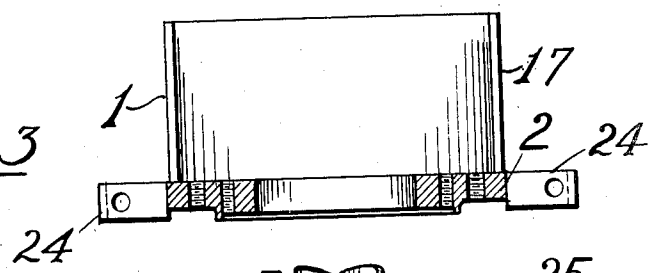


Fig. — 2

Fig. — 3



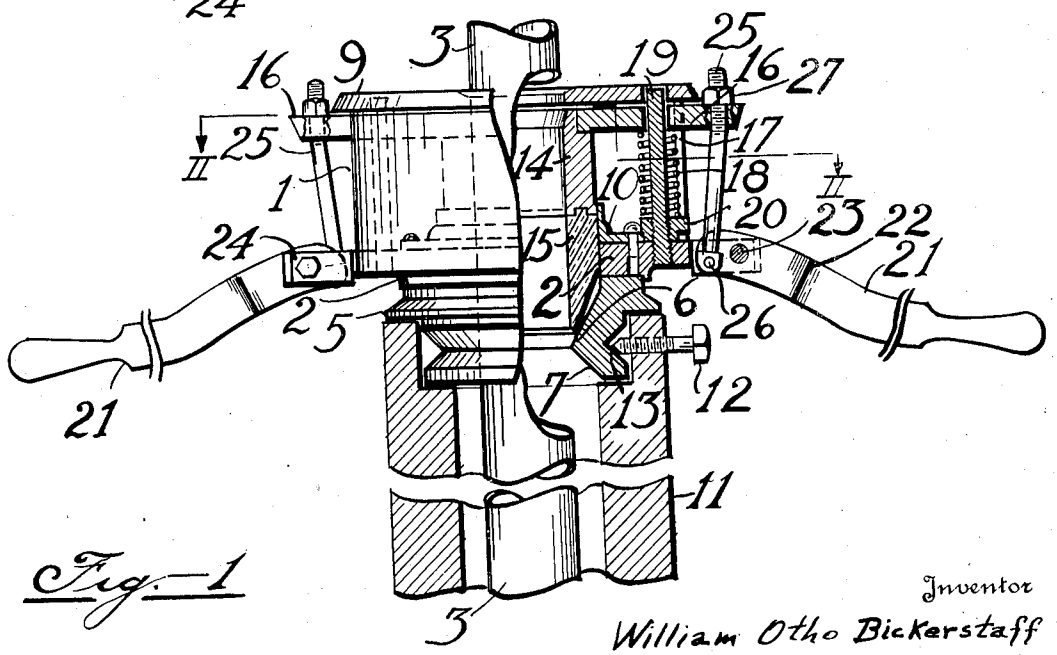


Fig. — 1

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OIL SAVER

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1 Claim. (Cl. 286—16)

This invention relates to improvements in oil saver casingheads.

The invention will be fully understood from the following description taken in connection with the accompanying drawing in which latter—

Fig. 1 is a side elevational view with parts of the oil saver broken away and showing a portion of the casinghead and tubing;

Fig. 2 is a transverse sectional view taken along the line II—II of Fig. 1, and

Fig. 3 is a transverse sectional view taken along the line III—III of Fig. 2.

Referring to the drawing, the oil saver comprises a body portion which includes a cylindrical member 1 to an end of which is secured a plate 2 having a central opening adapted to receive a string of tubing 3, or the like. Plate 2 is secured to a base 5 to form a unit therewith. The base is an annular member, a portion 6 of the bore of which converges inwardly toward its center. The surface of the bore flares outwardly at its lower end 7. A cover 9 is secured to the opposite end of the body portion and is apertured at its center to receive the tubing 3. A guide ring 10 is secured to plate 2 with its inner surface flush with the inner surface of the plate 2 to constitute a guide way for an annular packing gland. The body portion can be secured to a casinghead 11 by means of screws 12 which engage an annular V shaped groove 13 in the exterior of the base 5.

The annular packing gland is mounted for reciprocating movement longitudinally of the bore of the body portion whereby it can be caused to close the space between the string of tubing or the like and the body portion, or alternately can be elevated to clear the space between the tubing and body portion. The annular packing gland comprises a cylindrical member 14 carrying at one end an annular resilient packing ring 15 formed of rubber or other suitable composition. The outer surface of the packing ring tapers inwardly to its free end and is adapted to ride upon the converging surface 6 of the body portion. Cylindrical member 14 carries arms 16 which project outwardly from opposite sides of the member 14 through slots 17 in the body portion.

The annular packing gland is maintained in normally elevated position with the packing ring withdrawn from converging surface 6 by means of coil springs 18. Springs 18 are held in position by means of guide pins 19. Guide pins 19 are secured at one end to plate 2 and project freely through openings in arms 16 and cover 9. Springs 18 bear at one end upon adjusting nuts 20 threaded to pins 19 and at their opposite ends engage the arms 16.

The annular packing gland is forced toward the apex of the converging surface 6 by means of levers 21. The levers 21 are forked at 22 and are supported by means of a pintle 23 which extends through the fork and into spaced flanges 24 projecting outwardly from the plate 2. Bolts 25 for adjusting the position of the packing gland are pivotally secured to the protruding ends of the forks 22 by means of pins 26. The bolts extend longitudinally of the body portion and project freely through openings in the arms 16 and are adjustably secured to the arms by nuts 27.

When running or pulling tubing in an oil well which flows, the oil saver is affixed to the casinghead and the levers 21 are pivoted upwardly to cause the annular packing gland to be compressed against the body portion and tubing to close the opening therebetween. Waste of oil is thereby averted and the oil is caused to go through the lead lines from the casing head to a tank or other suitable place of disposal. The oil saver can be operated anywhere along the tubing joints when the well starts flowing. When the well is not flowing the packing gland is held in its upper position free from the tubing thus eliminating wear on the material of the gland. When running tubing in a well operating continuously, the levers are dropped while the collars on the tubing are passing through the oil saver.

Various changes may be made within the scope of the appended claim in which it is desired to claim all novelty inherent in the invention as broadly as the prior art permits.

I claim:

An oil saver comprising a body portion having a bore adapted to receive tubing, a packing gland carrying a continuous annular resilient packing ring mounted for reciprocating movement longitudinally of the bore and within the body portion, the ring and body portion having cam faces adapted to contract the ring upon longitudinal movement of the ring in one direction, resilient means for normally maintaining the ring withdrawn from the cam face of the body portion to uncontracted position, and means for forcing the ring in said direction to contract the ring against the tubing.

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