July 7, 1931. W. H. McKISSICK 1,813,308

STUFFING BOX

Filed Jan. 25, 1929

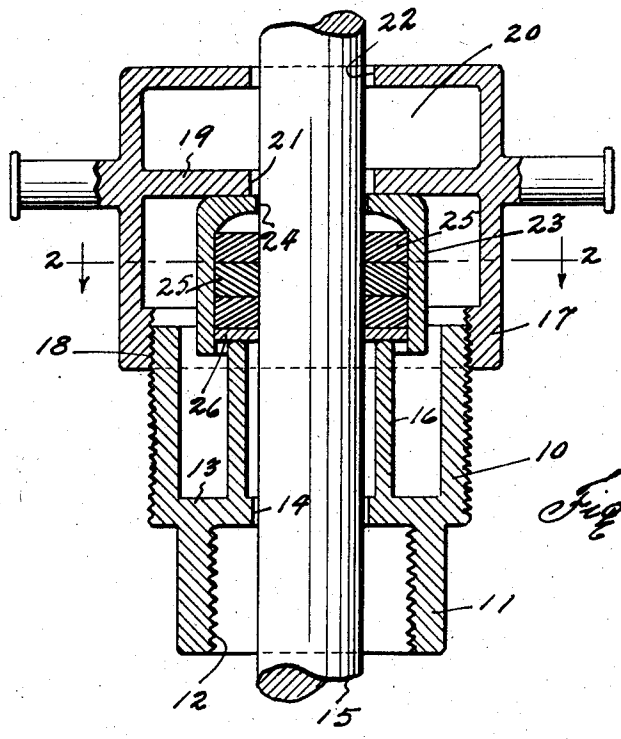


Fig. 1.

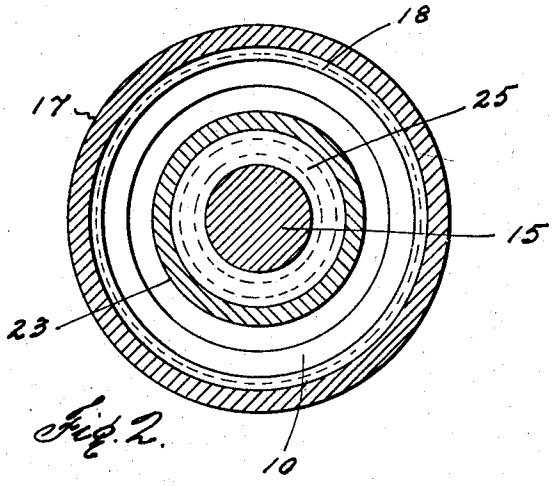


Fig. 2.

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STUFFING BOX

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This invention relates to new and useful improvements in stuffing boxes.

One object of the invention is to provide a stuffing box for use with polish rods for pumping wells and including certain improvements, whereby a more efficient and economical box is had.

A particular object of the invention is to provide a floating packing arranged to shift laterally with the rod and produce at all times a fluid-tight joint.

A further object of the invention is to provide a floating packing of a simple nature, whereby a top packing ring is eliminated and the packing container contacts direct with the transverse partition of the box head, thus reducing the number of parts.

Further reference will be made herein to the foregoing and other features of the invention, which will be more particularly pointed out.

In the following specification an exemplification of the invention is set forth and this is illustrated in the accompanying drawings, in which:

Fig. 1 is a vertical sectional view of a stuffing box constructed in accordance with the invention, and

Fig. 2 is a horizontal cross-sectional view taken on the line 2—2 of Fig. 1.

In the drawings the numeral 10 designates a box housing or body which has a reduced neck 11 internally screw-threaded at 12 to screw on the tubing or oil conducting pipe. At the intersection of the neck and body a transverse partition 13 is formed integral with the structure.

The partition 13 has a central opening 14 for receiving the polish rod 15. A concentric follower sleeve 16 rises from the partition 13 and surrounds the opening 14. This sleeve preferably terminates below the upper edge of the body and has its upper edge rounded.

A cap or head 17 has an internal annular boss 18 at its lower end which is screw-threaded to engage the threads of the body whereby the latter is telescoped into the cap when the latter is rotated in a clockwise direction. The cap has a transverse partition 19 in its upper portion and a chamber or space 20 above said partition. The partition has a central opening 21 registering with a similar opening 22 in the top of the cap for receiving the polish rod.

An inverted packing cup or cage 23 surrounds the polish rod and bears against the underside of the partition 19. The cup has an opening 24 through which the rod passes and this opening is smaller than the openings 21 and 22. All of the openings 14, 21, 22 and 24 are larger than the diameter of the rod 15, thus permitting a free reciprocation of said rod without binding in said openings.

The upper end of the cup 23 is dished and a plurality of packing washers or disks 25 are fitted in the cup. The uppermost washer engages the dished end of said cup. These packing washers may be made of leather, asbestos or any other material suitable for the purpose or a single coil of packing may be used instead of washers.

A metallic washer 26 is fitted into the bottom of the cup so as to rest upon the follower sleeve 16 and support the packing washers. While this washer 26 may be omitted it will, when used, save the lowermost packing washer from wear by contact with the sleeve.

The packing washers fit snugly on the polish rod so as to strip the same of oil and grease and prevent the upward passage of fluids and gases. When the cap 17 is screwed down the partition 19 will force the cup 23 downwardly, whereby the packing washers will be forced upward in said cup by the sleeve 16. The dished upper end of the cup will cause a compression of the washers 25.

Owing to the enlarged openings 14, 21 and 22 the rod may move laterally and the washer 26 slide on the rounded upper end of the sleeve 16. By this arrangement the rod is permitted a free movement. The packing cup is full floating and owing to the snug fit of the packing washers on the polish rod will move laterally with said rod, thus at all times assuring a fluid-tight joint. By this arrangement only one set of packings is required and the whole structure is greatly simplified.

Various changes in the size and shape of the different parts, as well as modifications

and alterations, may be made within the scope of the appended claims.

What I claim, is:

1. In a stuffing box for polish rods, a body, a cap adjustably mounted upon said body and having a partition, a polish rod passing through the body and cap and movable laterally thereof, a follower sleeve rigidly mounted in the body spaced from the polish rod and having its upper edge rounded, an inverted packing cup surrounding the polish rod and contacting with the cap at its upper end, the upper end of the sleeve telescoping into the cup, and a packing element within the cup compressed by the sleeve and snugly engaging the polish rod, the cup and packing being movable laterally with the rod in contact with said partition and supported by the rounded edge of said sleeve.

2. In a stuffing box for polish rods, the combination with a vertical polish rod, of a body, a cap adjustably mounted on the body, the body and cap having enlarged openings receiving the rod and permitting lateral movement thereof therein, an upright follower sleeve surrounding the rod and integral with the body, and spaced from both the rod and body, the cap having a transverse partition, an inverted packing cup surrounding the rod and overhanging the sleeve in the space intermediate the body, the upper end of the cup bearing against the partition, a packing medium within the cup embracing the rod and supported to slide upon the free end of the sleeve, and a wear washer within the cup interposed between the upper end of the sleeve and the packing medium.

In testimony whereof I affix my signature.

WILLIAM H. McKISSICK.