Nov. 12, 1929. E. WILSON 1,735,193

STUFFING BOX

Filed Aug. 12, 1927

Fig. 1.

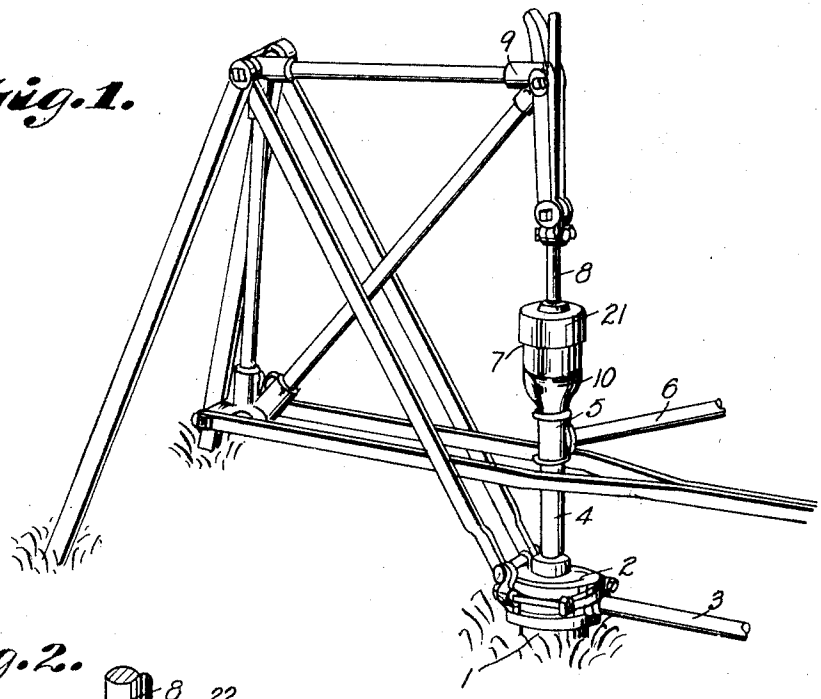


Fig. 2.

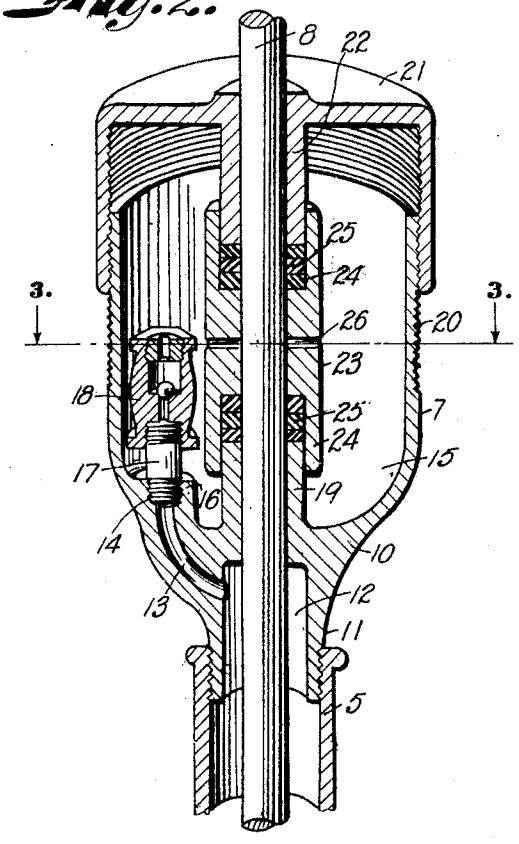
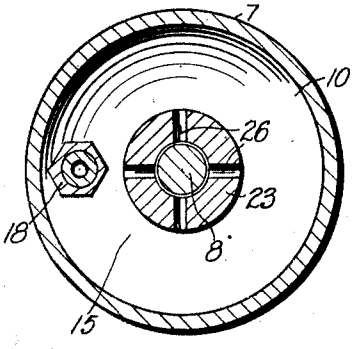


Fig. 3.



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UNITED STATES PATENT OFFICE

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STUFFING BOX

Application filed August 12, 1927. Serial No. 212,525.

My invention relates to stuffing boxes and more particularly to a device of that character for use in connection with oil well pumps; the principal object of the invention being to provide a box of this character which is self-lubricating and may serve as a guide for the polish rod.

In accomplishing this object I have provided improved details of structure, the preferred forms of which are illustrated in the accompanying drawings, wherein:

Fig. 1 is a perspective view of my improved device illustrating its application to the upper end of a string of well tubing and in connection with a pumping jack.

Fig. 2 is an enlarged, longitudinal section of the stuffing box, illustrating portions of the well tubing and polish rod.

Fig. 3 is a cross section on the line 3—3 of Fig. 2.

Referring more in detail to the drawings:

1 designates the upper end of a well casing and 2 a casing head provided with a gas vent pipe 3. Extending through the casing head 2 is the well tubing 4 provided with a T fitting 5 having connection with a lateral flow pipe line 6 and upon which is mounted a stuffing box 7, constructed and arranged in accordance with my invention. 8 designates a pump polish rod which extends through the stuffing box and tubing to the pump at the bottom of the well and is operatively connected with a jack 9 of ordinary construction and in accordance with common practice.

The stuffing box comprises a cup-shaped base 10 having a screw threaded neck 11 by which it is mounted on the upper end of the well casing, and provided with an interior chamber 12 open at the bottom for communication with the well tubing. A channel 13 extends from the neck chamber 12 through an exterior port 14 to communication with the base chamber 15 through an interior boss 16, and an interior nipple 17 carried by the boss 16. On the nipple 17 is mounted a back check valve 18 of any suitable construction for controlling flow of lubricant from the well tubing through the neck chamber and channel 13 to the chamber of the stuffing box.

Formed integral with an extending centrally into the base cup 10 is a gland 19, adapted for serving the ordinary packing purpose, as will presently be described, and as a guide for the polish rod 8.

The upper portion of the base cup is exteriorly screw threaded as at 20 and adjustably mounted on the cup is a cover 21 having an inwardly directed, integral gland 22 aligning with the gland 19 on the cup base.

23 designates an intermediate guide and bearing member having stuffing boxes 24 at its respective ends co-operative with the glands 19 and 22 for compressing the packing 25 within the boxes when the cover member is threaded onto the base. The intermediate member is provided with lateral ports 26 through which lubricant contained with the cup chamber may pass to contact with the polish rod.

Assuming the parts to be constructed and assembled as described, with the stuffing box mounted on the upper end of the well tubing as shown, when the pump is operated the rod is reciprocated in the stuffing box and oil elevated from the well in the usual manner, the major portion of the oil flowing off through the lateral line 6, but a part of it accumulating within the neck chamber 12 and passing through the channel 13 and check valve 18 into the cup chamber. When the chamber is filled to or above the level of the lateral ports 26, oil may pass through said ports to the polish rod, thereby maintaining the rod under proper lubrication at all times when the pump is in operation.

It is apparent that the stuffing box may be adjusted by manipulation of the cover member on the base and that the flange and bearing members serve as an effectual guide for the polish rod.

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

1. A device of the character described including a cup-shaped base and a cover adjustable on the base, the base and cover each having an inwardly directed gland, and an intermediate bearing member having packing boxes at its ends co-operative with the respective glands.

2. In combination with well tubing and a polish rod, a cup having a chambered neck attached to the tubing, an inwardly directed gland for the rod, and a channel leading from the neck chamber to the cup chamber, a cover adjustable on the cup having a gland directed toward and aligning with the cup gland, an intermediate bearing having stuffing boxes for the glands and lateral ports for supplying lubricant to the rod, and a back check valve controlling flow from the neck chamber to the cup chamber.

3. A device of the character described, including a cup-shaped base having an exterior chambered neck, and having a gland and a channelled boss extended into the interior of the base, an adjustable cap for the base having a gland aligning with the base gland, a bearing member in the cup chamber having packing boxes co-operative with said glands and having lateral ports for admitting lubricant from the base chamber to said packing, and a back check valve mounted on said base and controlling flow from the neck chamber to the cup chamber.

In testimony whereof I affix my signature.

EARL WILSON.