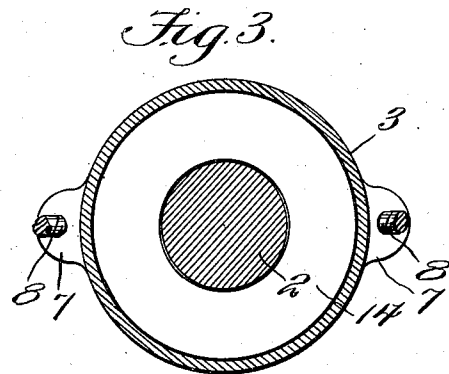
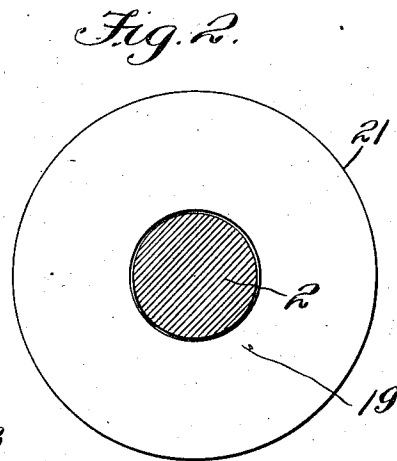
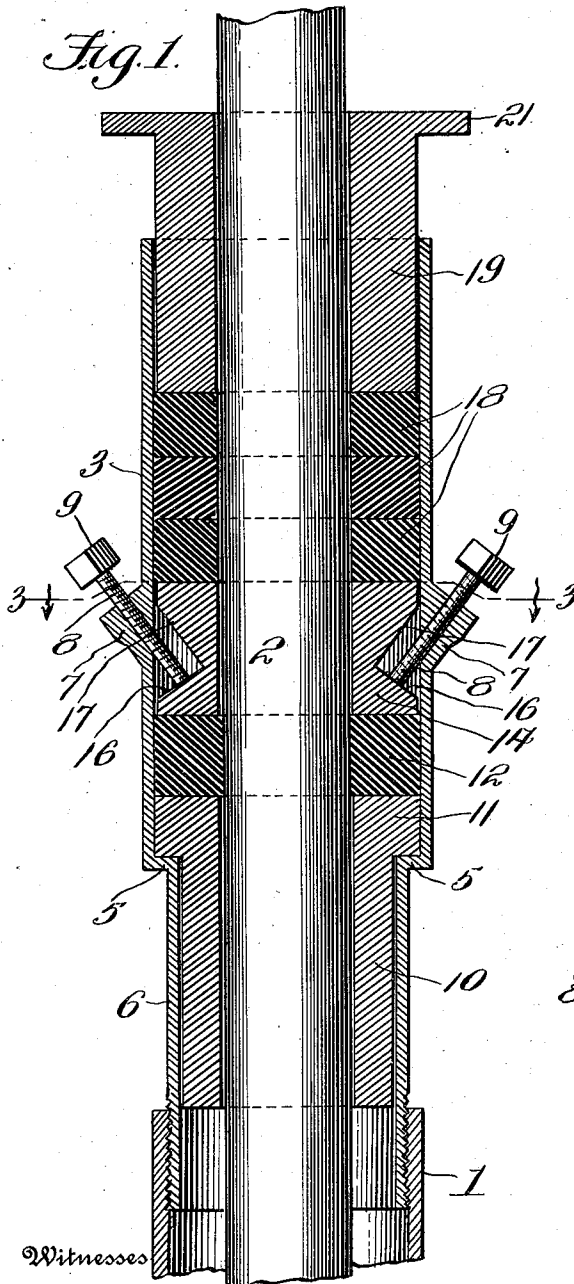


G. W. MASON & F. HAMMOND.
STUFFING BOX.

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1,028,758.

Patented June 4, 1912.



Witnesses

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UNITED STATES PATENT OFFICE.

GEORGE W. MASON, OF MARSHALL, AND FRANCESCO HAMMOND, OF CASEY, ILLINOIS.

STUFFING-BOX.

1,028,758.

Specification of Letters Patent.

Patented June 4, 1912.

Application filed April 11, 1911. Serial No. 620,315.

To all whom it may concern:

Be it known that we, GEORGE W. MASON and FRANCESCO HAMMOND, citizens of the United States, residing at Marshall, in the county of Clark, and Casey, in the county of Clark, respectively, and State of Illinois, have invented new and useful Improvements in Stuffing-Boxes, of which the following is a specification.

This invention relates to improvements in stuffing boxes for oil wells, and the object of the invention is to provide a device of this character which is of a simple construction, embodying few parts, and which will effectively prevent a waste of oil.

With the above object in view, and others which will appear as the nature of the description progresses, the invention resides in the novel construction and combination of parts hereinafter fully described and claimed.

In the drawings—Figure 1 illustrates a vertical longitudinal sectional view of the improved stuffing box, showing the same attached to the tubing of an oil well. Fig. 2 is a top plan view of the same. Fig. 3 is a transverse sectional view upon the line 3—3 of Fig. 1.

The primary object of the invention is to provide a stuffing box for oil wells which will effectively prevent the waste of oil while pumping, and which is so constructed as to receive and hold the packing against the "polish rod" to prevent a leakage between the said "polish rod" and the packing.

As is well known in the art, the packing in the stuffing boxes now commonly in use soon become worn, and it is necessary to resort to a "stop cock" at the well to hold back the "lead line pressure" and in so doing it is a frequent occurrence for the "bur" or "nut" on the core of the "stop cock" to become broken thus forcing out the core and consequently resulting in a big loss of oil before the pumper can get to a junction or to the power to shut off the wells that are pumping through this particular lead line, the oil in the said lead line thereby being wasted before a new "stop cock" can be attached. Our improvement is designed to prevent such loss, said improvement embodying means which obviates the employment of the stop cock in packing a well. The top follower or head

of our device is held and compressed by a weighted lever, commonly known in the trade as a "calf sucker." These levers are quite frequently thrown off accidentally and a large loss of oil is the consequent result, especially when there are several wells connected to the same "lead line."

Our invention, as above stated, is adapted to obviate and overcome the defects above enumerated, and in the drawings the numeral 1 designates the well tube, and 2 the polish rod. The numeral 3 designates the stuffing box. This box preferably comprises a cylinder and is provided with an inturned portion forming a shoulder 5 from which extends a reduced portion 6, which extends to the area of the mouth of the pipe 1, and the said extension is provided with threads which are adapted to cooperate with similar threads upon the tube 1. The box or casing 3 is provided, at a suitable distance above the shoulder 5, with right angularly arranged off-set or angular lugs 7. Each of these lugs is provided with a threaded aperture and each of the said apertures is adapted to receive the threaded stem 8 of suitable headed bolts 9. The lower portion of the box or casing 3 is provided with an internal, removable sleeve 10. This sleeve is formed with an annular enlarged head 11, the latter adapted to have its inner face engaged with the shoulder 5 of the box or casing 3. Positioned within the casing directly above the sleeve 10 and contacting with the head thereof is a compressible packing ring 12. The bore or opening of the ring, as well as the bore or opening of the sleeve 10 is of an area greater than that of the diameter of the polish rod 2. Arranged directly above the compressible packing ring 12 is a follower member 14. This member is adapted to snugly engage the circumferential surface of the box or casing 3, and has its bore or opening of an area sufficient to provide for the free movement of the polish rod 2. The follower 14 may be constructed of any desired material, preferably metal, the peripheral wall formed to present a substantially horizontal wall 16, and a downwardly inclined wall 17, forming a substantially V-shaped notch. The bolts 9 are arranged at an inclination corresponding to that of the inclined wall 17, and the said bolts 9 upon rotation are adapted to compress the

packing ring 12 to bring the same tightly into engagement with the polish rod 2 and the circumferential surface of the box or casing 3.

- 5 The numerals 18 designate a plurality of packing rings, preferably constructed of rubber which surround the polish rod and which are arranged directly above the fol-
 10 lower 14. The numeral 19 designates the upper fol-
 lower for the box or casing 3. This fol-
 lower comprises an elongated body portion. The follower is further formed with an en-
 15 larged head 21, the latter being adapted to support a weighted lever which compresses
 19 on 18 in such a manner as to force 18 snugly against the polish rod and against
 the wall 33. It will be noted that the cap
 20 19 really provides a follower for the com-
 pressible packing rings 18 and by reference to Figs. 1 and 2 of the drawings it will be
 further noted that the central wall of the
 said follower cap is of a slightly larger
 25 area than the cross sectional area of the
 polish rod 2.

- In the general construction of packing
 boxes for polish rods employed in connec-
 tion with oil wells, as far as I am aware, no
 effective means have been provided for pre-
 30 venting the escape of oil from the tube
 after worn packing rings have been re-
 moved from the stuffing box to be replaced
 by new rings, and as a consequence, quite
 an amount of the fluid has been wasted.
 35 With our device, however, it will be noted
 that the packing ring 12 does not normally
 contact the surface of the polish rod 2,
 while the packing rings 18 at all times
 tightly engage with the said rod. When
 40 the packing rings 18 become worn and their
 removal is thus necessitated, the bolt mem-
 bers 9 are rotated so as to force the follower
 tightly against the packing ring 12 to com-
 press the latter and to force the same
 45 tightly against the packing ring. When
 this is accomplished it is obvious that upon
 the removal of the follower cap 19 the worn
 packing rings 18 may be readily removed
 from the box or casing 3, and new rings re-
 50 placed therefor. When the rings are in po-
 sition and the follower cap readjusted upon
 the box or casing, the bolts 9 are rotated in
 an opposite direction so as to allow the com-
 pressible packing ring 13 to expand and to
 55 have its bore spread away from contact
 with the surface of the polish rod 2. It is
 also to be noted that all of the elements
 within the stuffing box 2 may readily be
 removed when desired. It will be noted
 60 that when the bolts 9 are rotated within the
 lugs 7 so as to bring their contacting faces
 away from the substantially horizontal wall
 16 provided by the pockets 15, the said fol-
 lower, as well as the ring 12 and sleeve 10
 65 may be removed from the said box.

Having thus fully described the said in-
 vention, what we claim is:

1. A stuffing box for the purpose set forth comprising a cylindrical casing hav-
 ing its lower end reduced to provide a 70
 shoulder and a threaded extension, a headed
 sleeve within the casing and engaging the
 shoulder thereof, a packing ring arranged
 directly above the sleeve, a follower mem- 75
 ber having its peripheral wall formed to
 present a substantially horizontal wall and
 a downwardly inclined wall arranged with-
 in the casing and positioned upon the said
 packing ring, the casing being provided
 with a plurality of angularly projecting 80
 lugs, each of said lugs having a threaded
 opening communicating with the casing, a
 plurality of packing rings positioned above
 said follower, a cap adapted to engage
 within the upper portion of the casing and 85
 to contact with the uppermost one of a se-
 ries of packing rings positioned above said
 follower, and headed threaded bolts for the
 said openings and adapted to engage upon
 the substantially horizontal shoulder of the 90
 said follower.

2. A stuffing box for the purpose set forth
 comprising a cylindrical casing having its
 lower end reduced to provide a shoulder and
 an exteriorly threaded extension, a headed 95
 sleeve within the casing engaging the shoul-
 der thereof, a packing ring arranged di-
 rectly above the sleeve, a follower member
 having its peripheral wall formed to pre-
 sent a substantially horizontal wall and a 100
 downwardly inclined wall arranged within
 the casing, and positioned upon the said
 packing ring, the casing being provided
 with a plurality of angularly projecting
 lugs, each of said lugs having a threaded 105
 opening communicating with the casing, a
 series of packing rings positioned above
 said floor, a cap adapted to engage within
 the upper portion of the casing and to con-
 tact with the uppermost one of said series 110
 of packing rings positioned above said fol-
 lower, and headed threaded bolts for the
 said openings arranged at an inclination to
 said downwardly inclined hollow of the fol-
 lower, and adapted to engage the substan- 115
 tially horizontal shoulder.

3. A stuffing box for the purpose set forth
 comprising a cylindrical casing having its
 lower end reduced to provide a shoulder
 and a threaded extension, a headed sleeve 120
 within the casing engaging the shoulder
 thereof, a packing ring arranged directly
 above the sleeve, a follower member having
 its peripheral wall formed to present a sub-
 stantially V-shaped notch and positioned 125
 upon the packing rings, the casing being
 provided with a plurality of angularly pro-
 jecting lugs, each of said lugs having a
 threaded opening communicating with the
 V-shaped notch of said follower, a cap 130

adapted to engage within the upper portion
of the casing and to be supported above the
said follower, and headed threaded bolts for
the said openings arranged at an inclination
5 to said V-shaped notch of the follower and
adapted to engage with one of the walls of
the said V-shaped notch.

In testimony whereof we affix our signatures in presence of two witnesses.

GEORGE W. MASON.

FRANCESCO HAMMOND.

Witnesses:

ADA BUSSELL,

GEO. G. ROBERTSON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."