

Dec. 22, 1925.

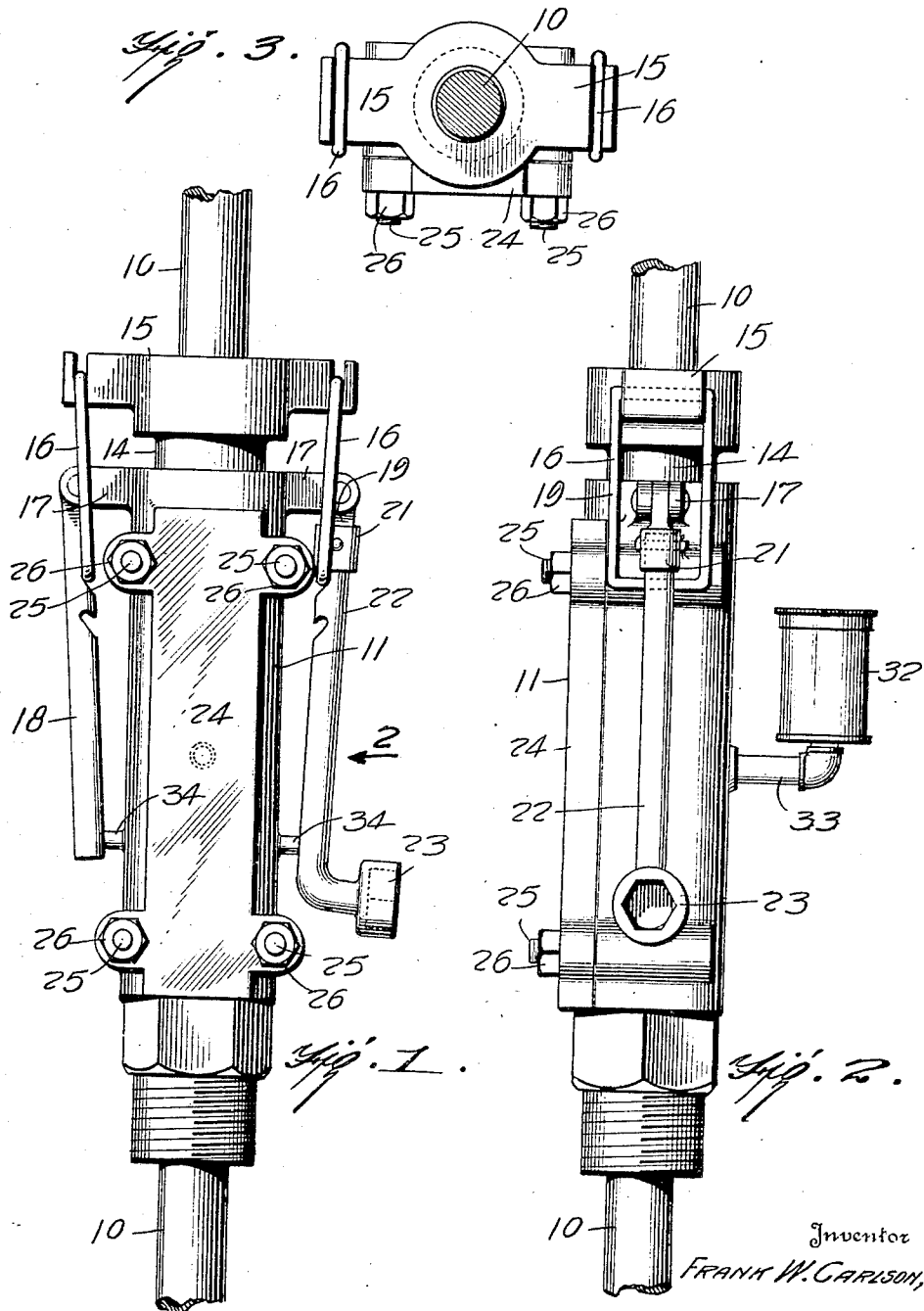
F. W. CARLSON

1,566,816

STUFFING BOX

Filed March 29, 1923

2 Sheets-Sheet 1



By Franklin H. Doughty
Attorney

Dec. 22, 1925.

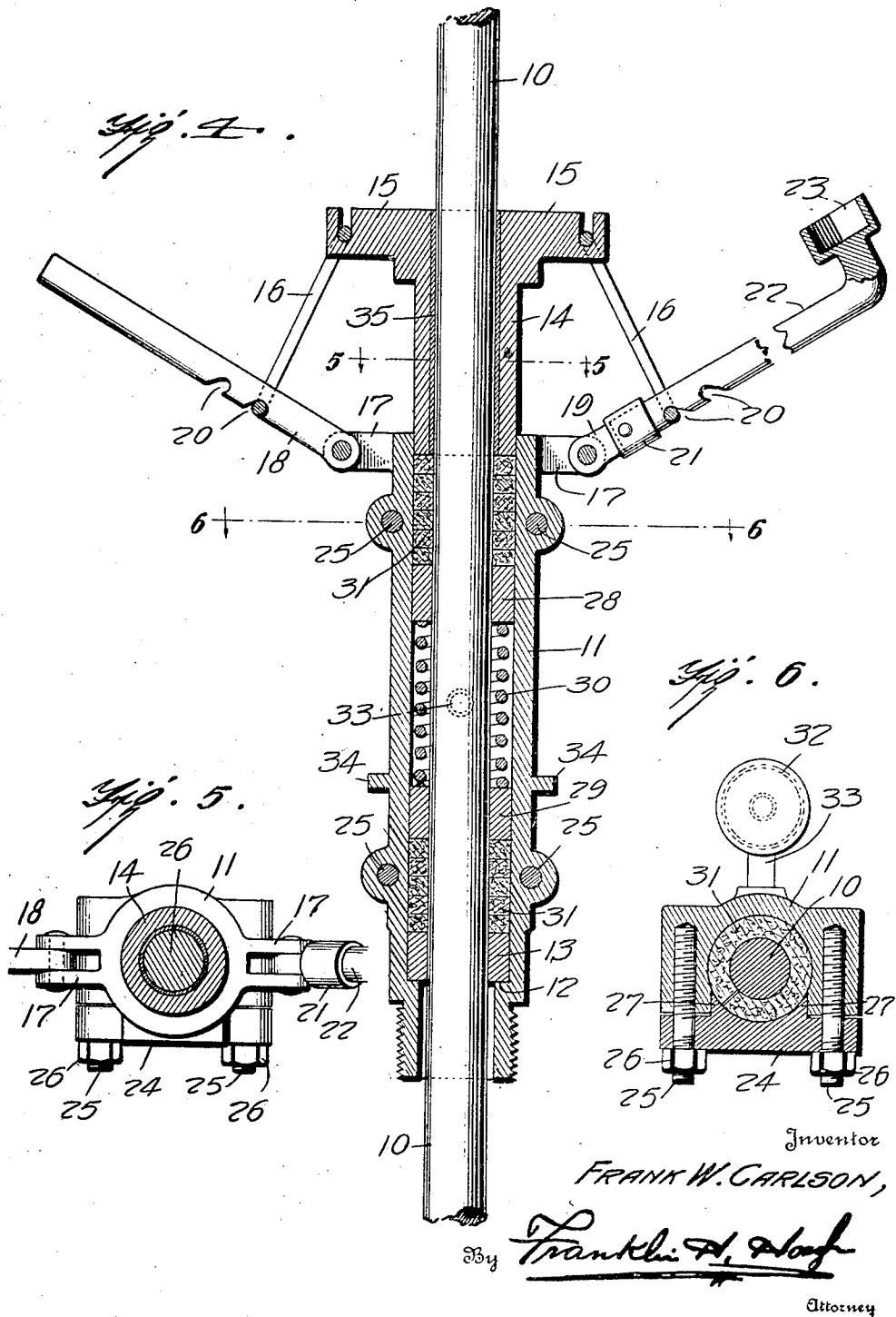
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UNITED STATES PATENT OFFICE.

FRANK W. CARLSON, OF OILFIELDS, CALIFORNIA.

STUFFING BOX.

Application filed March 29, 1923. Serial No. 628,548.

To all whom it may concern:

Be it known that FRANK W. CARLSON, a citizen of the United States, residing at Oilfields, in the county of Fresno and State of California, has invented certain new and useful Improvements in Stuffing Boxes; and he does hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to stuffing-boxes and has for an object to provide a stuffing-box of improved type embodying improved facilities for re-packing without removal from the rod.

A further object of the invention is to provide a stuffing-box or gland adapted especially for use upon a reciprocating rod of very considerable longitudinal movement, whereby the side of the box may be opened, the pressure upon the packing released and new packing inserted through the side of the box.

A further object of the invention is to provide improved mechanical means for carrying out the functions referred to.

With these and other objects in view, the invention comprises certain novel parts, elements, units, combinations, mechanical movements and interactions as disclosed in the drawings, together with mechanical equivalents thereof, as will be hereinafter more fully described and claimed.

In the drawings:

Figure 1 is a view of the improved stuffing-box in side elevation;

Figure 2 is a view of the stuffing-box in edge elevation as indicated by arrow 2 at Figure 1;

Figure 3 is a top plan view of the stuffing-box with the rod in section;

Figure 4 is a longitudinal, diametrical sectional view through the stuffing-box with the compression members released in position for repacking the box;

Figure 5 is a sectional view taken on line 5—5 of Figure 4;

Figure 6 is a transverse sectional view taken on line 6—6 of Figure 4.

Like characters of reference indicate corresponding parts throughout the several views.

The present invention is directed to a stuffing-box to be used upon a reciprocating rod of considerable length as, for instance, the polish rod of an oil-well or a similar installation. While especially designed for this purpose, it is obvious that it is applicable to the packing of reciprocating rods generally. As shown in the drawings, a rod, 10, intended to conventionally represent a polish rod is shown extending through the stuffing-box and broken at both sides, indicating indeterminate length. The stuffing-box proper comprises a housing, 11, through which the polish rod extends in the usual manner and into which the packing is inserted about the rod. For this purpose the housing is provided with a shoulder, 12, at or adjacent to the lower end, as a seat for a washer, 13.

In the upper end of the housing, a follower, 14, is provided with a sliding fit in the housing and of such length as to be moved into the housing a limited distance. This follower is provided with a crosshead, 15, with links, 16, engaging said crosshead and levers for operating the same. The levers are fulcrumed to ears, 17, formed preferably integral with the housing, 11, and the levers 18 and 19 engage the links, 16, by means of notches, 20. Preferably one of these levers is jointed, provision being made by the sleeve, 21, for receiving the section, 22, of said lever, which preferably will terminate in a socket, 23, constituting a wrench for manipulating the nuts to be hereinafter more fully described.

The front of the housing is provided with a door, 24, secured rigidly thereto in any approved manner, as by bolts, 25, with nuts, 26, properly proportioned to be operated or actuated by the socket, 23, of the wrench member, although it is to be understood, of course, that the use of this particular wrench is no limitation upon the present invention.

The inner side of this door, 24, is provided with lips, 27 (see Figure 6) having an arcuate groove between, corresponding in its circumference to the bore of the housing, 11, so that when clamped in position as shown at Figure 6 it will complete the bore of the

housing, forming an annular chamber with the polish rod as the centre. Within the housing, washers, 28 and 29, surround the polish rod, 10, spaced by a spring, 30, and
5 between the washers, 13 and 29, and the washer, 28, and follower, 14, packing, 31, of any usual and ordinary type is employed.

It is obvious that when the levers, 18 and 19, are raised to the position shown at Figure 4, the tension on the spring, 30, is released and the compression upon the packing, 31, likewise and similarly released. In this position, the door, 24, may be removed and the old packing, if worn, may be removed from the side of the housing and replaced by new packing. It is well known that packing now ordinarily in use comes in such lengths that it may be wound spirally about the polish rod in this position and
20 when submitted to compression by moving the levers, 18 and 19, from the position shown at Figure 4 to the position shown at Figure 1, this packing will be put under compression to perform its function. For
25 the purpose of lubricating, an oil or grease cup, 32, is provided, having a conduit, 33, communicating with the interior of the housing intermediate the washers, 28 and 29, so that the lubricant may be forced into the
30 interior of the housing to distribute itself upon the rod as the rod reciprocates. Such

mechanical features as stops, 34, for the levers, and bushing, 35, for the rod, will be readily understood and need no explanation.

What I claim is:

1. A stuffing box comprising a housing, a rod extending through the housing, a door in one side of the housing, the combination of the housing and door forming an annular chamber about the rod, packing introduced
40 into the annular chamber, and means upon the exterior of the housing for exerting compression upon the packing, said means comprising links and levers having a plurality of notches for engaging the links to vary
45 the compression upon the packing.

2. A stuffing box comprising a housing having an opening in one side corresponding substantially to the diameter of the bore of the housing, a door having a member
50 fitting into the opening in the housing and provided with a segmental inner surface supplementary to the bore of the housing, forming a substantially circular chamber, a follower in one end of the housing, and
55 means for forcing the follower into and maintaining it in compressing condition in the housing.

In testimony whereof he hereunto affixes his signature.

FRANK W. CARLSON.