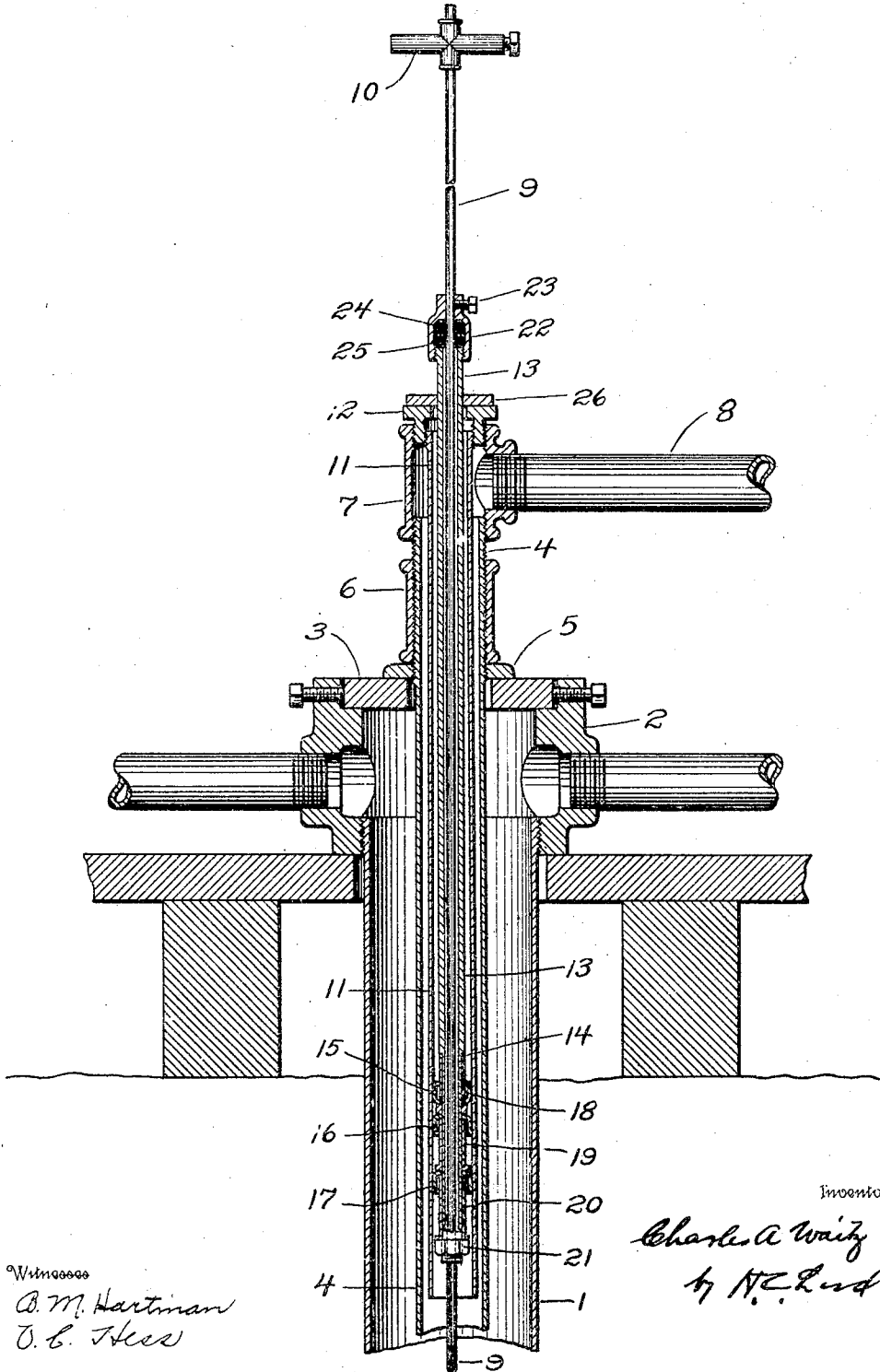


C. A. WAITZ.
 SUCKER ROD PACKING FOR OIL WELL TUBINGS.
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Patented May 6, 1913.



Witnesses
 C. M. Hartman
 O. C. Hees

Inventor
 Charles A. Waitz
 by N. C. Lund

UNITED STATES PATENT OFFICE.

CHARLES A. WAITZ, OF ROUSEVILLE, PENNSYLVANIA.

SUCKER-ROD PACKING FOR OIL-WELL TUBINGS.

1,060,961.

Specification of Letters Patent.

Patented May 6, 1913.

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To all whom it may concern:

Be it known that I, CHARLES A. WAITZ, a citizen of the United States, residing at Rouseville, in the county of Venango and State of Pennsylvania, have invented new and useful Improvements in Sucker-Rod Packings for Oil-Well Tubings, of which the following is a specification.

This invention relates to sucker rod packings for oil well tubings and consists in certain improvements in the construction thereof as will be hereinafter fully described and pointed out in the claims.

The common practice for forming a closure between the sucker rod and the tubing involves the use of what is commonly known as a polished rod forming an extension of the sucker rod, the polished rod extending through a stuffing box at the top of the tubing. This construction is open to certain objections, one of the principal ones being that the polished rod, so called, being left in an exposed position while the pump is not in operation becomes corroded and thus interferes with its ready movement through the stuffing box. In consequence of this together with the vibration of the polished rod, it is difficult to maintain a closed joint in the stuffing box where any pressure is encountered and in many wells either by reason of the head against which the oil is pumped or the operation of the gases in the tubing flowing the oil at intervals, the stuffing box is subjected to considerable pressures and where there is some leakage there is a considerable loss of oil. It is also difficult to lubricate this polished rod, the oil being pumped being often so mixed with salt water as to be of little utility for this purpose.

The primary objects of my invention are directed to overcoming the objections above noted.

Further objects as to details of construction will appear from the specification and claims.

The invention is illustrated in the accompanying drawings wherein a central vertical section of the top of an oil well is shown.

1 marks the casing, 2 the casing head, 3 the casing top, 4 the tubing, 5 the tubing ring resting on the casing top and 6 a coupling on the tubing resting on the ring 5. A T 7 is screwed on to the top of the tubing and the lead line or discharge pipe 8 leads from this T. 9 marks the sucker rod

which as shown is of the iron rod type. 10 marks the sucker rod adjuster. These are of ordinary construction.

A polished tube 11 extends downwardly from the top of the tubing, being secured to the T 7 by means of a bushing 12, the bushing being screwed into the top of the T and the polished tube 11 being screwed into the bushing. A hollow rod 13 is arranged around the sucker rod and extends into the polished tube 11. The lower end of the hollow rod 13 is reduced and screw threaded at 14. An upwardly faced cup 15 is arranged on this reduced portion and two downwardly faced cups 16 and 17 are arranged on this reduced portion, the rings 18, 19 and 20 being placed to properly secure the cups and the nut 21 being screwed onto the lower end to secure the rings in place. A clamp fitting and stuffing box 22 is secured to the upper end of the hollow rod 13 by means of the set screw 23. It has the pocket 24 in which a packing material 25 is placed to prevent the escape of gas.

The opening through the bushing 12 is preferably somewhat larger than the hollow rod 13 so as to allow for any swaying of the sucker rod that there may be incident to the kind of actuating mechanism used. A floating washer 26 is arranged on the hollow rod above the bushing 12 so as to form such a closure as to exclude dirt at the top.

A lubricant is placed in the hollow tube 11 and is maintained in this tube by the upwardly faced cup 15. A good grade of lubricant may be used for this purpose so that the packing formed is always well lubricated.

In the operation of the device the oil as it is pumped from the well passes outside the polished tube between the polished tube and the tubing and is discharged to the lead line 8. The downwardly faced cups 16 and 17 prevent any outward flow of liquid through the polished tube and with pumps of ordinary construction the cups 15 and 16 would by reason of the displacement on the downward stroke displace some of the liquid from the tubing. It will be observed, however, that a perfect closure is maintained by means of the cups 16 and 17 and that lubricant is maintained by means of the cup 15 and that the joint formed by the packing is thus farther away from the pump actuating mechanism than is possible where the packing is at the top of the well so that the swaying of the sucker rod has less effect upon the

packed joint. The polished tube is also so housed that ordinarily any moisture that may accumulate in it would not freeze.

What I claim as new is:—

5 1. In a sucker rod packing for oil well tubings, the combination of a well tubing; a polished tube extending downwardly into the tubing; a sucker rod extending through the polished tube; and a packing secured to the
10 the sucker rod and operating in the polished tube to form a sucker rod closure for the tubing.

2. In a sucker rod packing for oil well tubings, the combination of a well tubing;
15 a polished tube extending downwardly from the upper end of the tubing and leaving a space between the polished tube and the well tubing for the discharge of oil from the tubing; a sucker rod extending through the
20 polished tube; and a packing secured to the sucker rod and operating in the polished tube to form a sucker rod closure for the tubing.

3. In a sucker rod packing for oil well
25 tubings, the combination of a well tubing; a polished tube extending downwardly into the tubing; a bushing screwed into the tub-

ing and on to the polished tube for securing the polished tube in place in the well tubing; a sucker rod extending through the polished
30 tube; and a packing secured to the sucker rod and operating in the polished tube for forming a sucker rod closure for the well tubing.

4. In a sucker rod packing for oil well
35 tubings, the combination of a well tubing; a polished rod extending into the well tubing; a bushing screwed into the well tubing and on to the polished tube for securing the polished tube in place in the well tubing; a
40 sucker rod extending through the polished tube; a packing secured to the sucker rod and operating in the polished tube for forming a sucker rod closure for the well tubing; and a floating washer arranged on the sucker
45 rod and over the bushing.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

CHARLES A. WAITZ.

Witnesses:

B. M. HARTMAN,
V. C. HESS.