

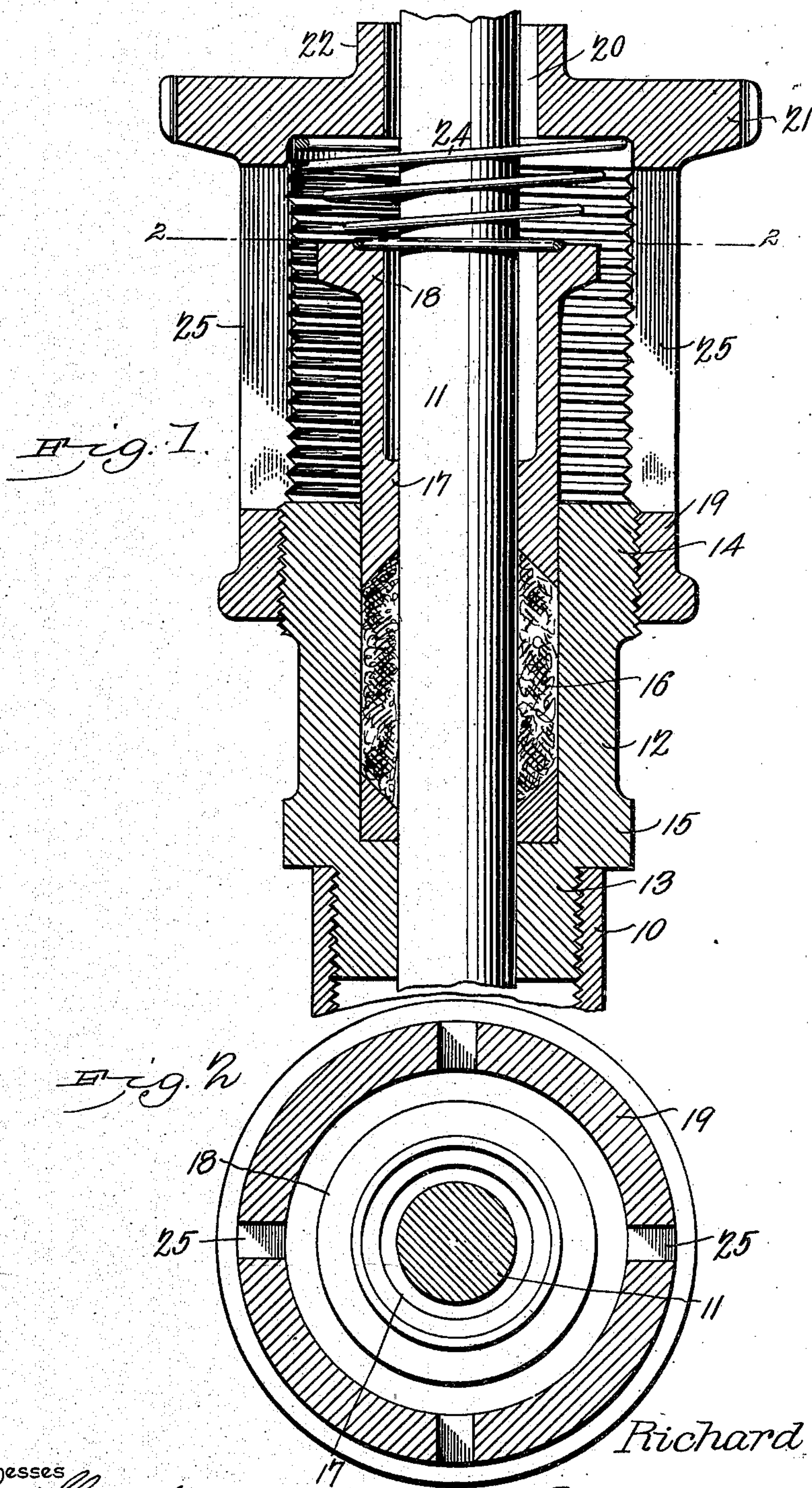
No. 734,633.

PATENTED JULY 28, 1903.

R. TITUS.  
STUFFING BOX.

APPLICATION FILED FEB. 16, 1903.

NO MODEL.



Witnesses  
*E. J. Stewart*  
*C. H. Woodward*

*Richard Titus,*  
Inventor.

by *C. A. Snow & Co.*  
Attorneys



# UNITED STATES PATENT OFFICE.

RICHARD TITUS, OF BOWLING GREEN, OHIO.

## STUFFING-BOX.

SPECIFICATION forming part of Letters Patent No. 734,633, dated July 28, 1903.

Application filed February 16, 1903. Serial No. 143,621. (No model.)

*To all whom it may concern:*

Be it known that I, RICHARD TITUS, a citizen of the United States, residing at Bowling Green, in the county of Wood and State of Ohio, have invented a new and useful Stuffing-Box, of which the following is a specification.

This invention relates to stuffing-boxes employed to prevent leakage between moving rods, such as piston and pump rods and the "polish-rods" used in connection with oil-well operations, but is more particularly adapted for the latter purpose, and has for its object to simplify and improve such devices, to provide means for a uniform constant pressure upon the packing, and to regulate and control the pressure thereon.

In the drawings illustrative of the invention, in which corresponding parts are denoted by like designating characters, Figure 1 is a sectional elevation of the device applied. Fig. 2 is a transverse section on the line 2 2 of Fig. 1.

The improved device, as above stated, is more particularly applicable to the stuffing-boxes of the polish-rods employed in oil-well operations and for the purpose of illustration is shown thus applied, 10 representing a section of an ordinary oil-well tube, and 11 a section of the polish-rod operating therein.

The improved device consists of a "box" or base portion 12, having a threaded preferably reduced lower portion 13 adapted to be screwed into the internally-threaded upper end of the tube 10 and with the upper end of the part 12 enlarged and externally threaded, as at 14. The portion 12 will be formed with hexagonal wrench-surface (indicated at 15) to provide for its forcible connection with the tube 13. Within the box portion 12 is an annular packing-cavity in which the yieldable packing (indicated at 16) is supported, the lower end of the cavity being inclined in the usual manner. The packing employed is the usual hemp, rubber, or other suitable material employed for this purpose.

Movably engaging the upper end of the packing-cavity is a follower-gland 17, having inclined lower end operating in contact with the yieldable packing and with its upper end laterally extended to increase its upper bearing-surface, as shown at 18. The follower-gland will preferably be formed to engage the rod 11 at the lower portion only to reduce the friction, as shown in Fig. 1. Surmounting the box portion 12 is an internally-threaded cap 19, engaging the threaded portion 14 and provided with a central aperture 20 in its upper end, through which the rod 11 passes loosely, as shown, the aperture being considerably larger than the rod, so that the latter will not contact with the cap. The cap portion 19 will be provided with a laterally-extended upper end 21, provided with spaced cavities to form a hand-grip to enable it to be readily rotated for vertical adjustment upon the portion 14 and will likewise be preferably provided with a hexagonal wrench-rim (indicated at 22) to provide means for forcible rotation, if required. Between the inner surface of the cap member 19 and the enlarged upper end 18 of the follower-gland 17 is a spring 24, preferably of the cone spiral form, so that when completely compressed it will occupy no more space than one thickness of the wire of which it is composed. The spring thus exerts a constant force upon the follower-gland and maintains a corresponding uniform pressure upon the yieldable flexible packing 16 and automatically "takes up" any inequality in the wear and maintains a constant liquid-tight joint between the rod 11 and tube 10.

If by any chance inequalities occur in the rod 11, the spring acting constantly will yield if the inequality is a protuberance and compress the packing into the depression if the inequality is in that form, and thus constantly and automatically adapt the packing to the outlines of the rod and automatically follow up all the inequalities therein and prevent leakage at all times. This is a very important feature of the invention and adds materially to the value and efficiency of the invention, as it insures the constant and automatic adaptation of the device to the rod no matter what its contour may be.

The cap 19 is formed with spaced vertical apertures 25 to provide means for the escape of any leakage around the rod and prevent it from being carried through the top of the cap or from "flooding" the cap. This is also an important feature of the invention, as it ob-



viates what has heretofore been a source of annoyance in connection with devices of this character.

5 The device may be adapted to any size of tube and polish-rod or to rods employed for other purposes, and I do not, therefore, wish to be limited in the use of the device to any particular form of rod or to rods employed for any specific purpose and reserve the right  
10 to the use of the device for all purposes for which it is adapted.

Having thus described the invention, what I claim is—

15 A stuffing-box comprising a base or "box" portion externally threaded and surrounding the rod, and having an internal cavity be-

tween the rod and box, a yieldable packing within said cavity, a follower engaging the packing within said cavity, a cap internally threaded and engaging said threaded box, 20 and provided with transverse apertures for the escape of surplus material, and a spring between said follower and cap, exerting a constant yielding force upon said follower, substantially as described. 25

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

RICHARD TITUS.

Witnesses:

FRANK W. DUNN,  
HARRY ROSS.