

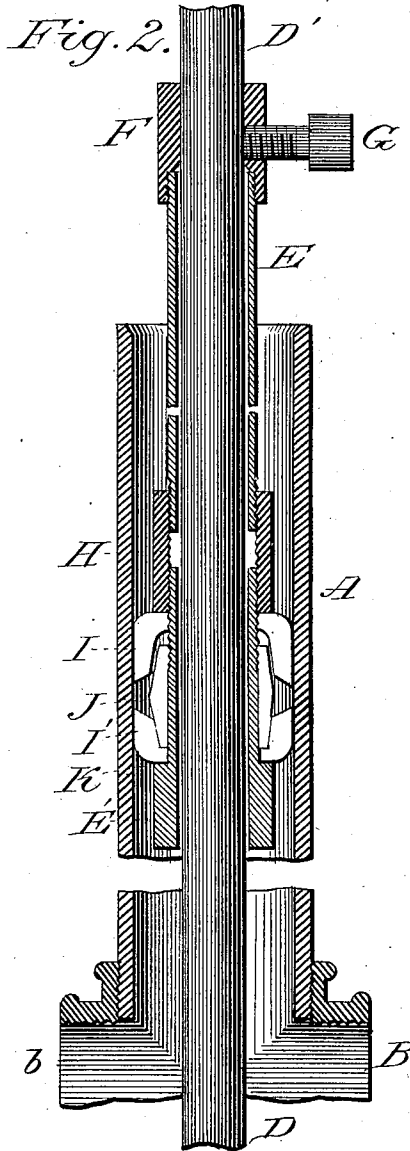
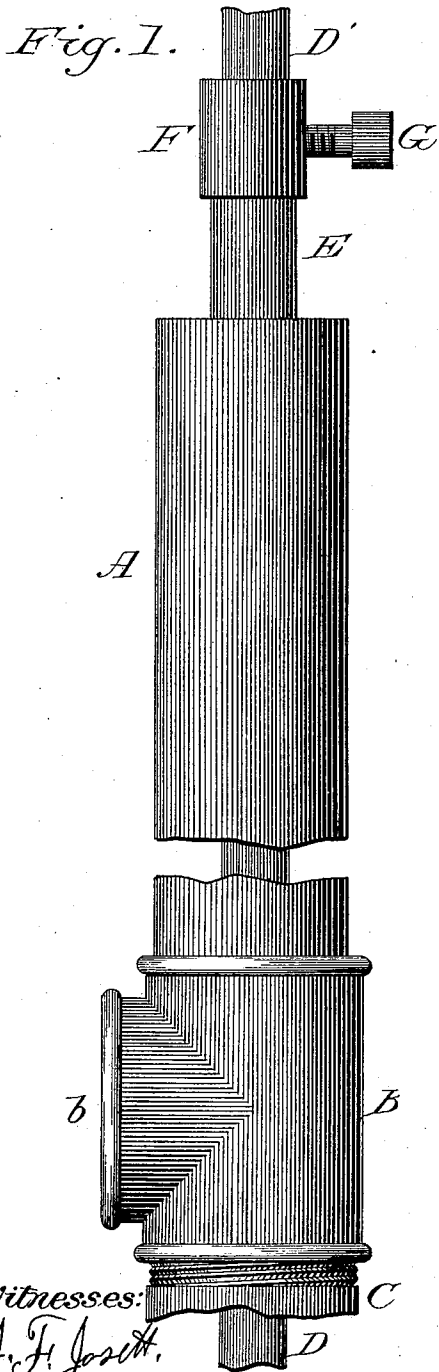
(No Model.)

W. SKINNEN.

APPARATUS FOR PUMPING ARTESIAN WELLS.

No. 244,151.

Patented July 12, 1881.



Witnesses:

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UNITED STATES PATENT OFFICE.

WILLIAM SKINNEN, OF BRADFORD, PENNSYLVANIA.

APPARATUS FOR PUMPING ARTESIAN WELLS.

SPECIFICATION forming part of Letters Patent No. 244,151, dated July 12, 1881.

Application filed January 31, 1881. (No model.)

To all whom it may concern :

Be it known that I, WILLIAM SKINNEN, of the city of Bradford, McKean county, State of Pennsylvania, have invented a new and useful Improvement in Apparatus for Pumping Oil or other Artesian Wells, which device relates to and is for packing the upper end of the tubing in such wells while the same are being pumped, to prevent the escape from the top of the tubing of the material being pumped and raised and force it out through the proper escape-pipe; and I do hereby declare the following to be a full, clear, and exact description thereof.

The manner in which the upper end of the tubing in oil and other Artesian wells is commonly packed is by attaching to the upper end of the tubing an ordinary stuffing-box, through which passes a rod of metal, commonly called a "polish-rod," the upper end of which is attached to the walking-beam or other power used to pump the well, and the lower end to the sucker-rods within the tubing. The stuffing-box, when screwed down tightly enough to prevent the escape of the material being pumped, tightly compresses the polish-rod, thereby causing a large amount of friction, and requiring a greater amount of power to pump the well than with my device, and after the polish-rod has been in use for a time it becomes rough and unfit for use, so that a new one must be substituted in its stead, which is expensive in the operation of such wells.

By my invention I entirely overcome these difficulties, as my device not only is almost entirely free from friction while in operation, and at the same time the joint formed entirely prevents the escape from the top of the tubing of the materials being raised. Besides these advantages my device operates as a suction-valve in the top of the tubing, thereby facilitating the raising and discharge of the materials being pumped; and the wearing parts are so constructed that they may be easily and quickly renewed, if necessary, at a trifling expense to the operator.

The manner in which I accomplish these ends and the means I have adopted for so doing will fully appear in the following general description of my invention.

Figure 1 is a perspective view of my device

with the connections thereto broken off. Fig. 2 shows a sectional view of my device cut vertically down through its center, with connections thereto broken off.

The letters on both figures refer to the same parts in each of the figures.

A represents a piece of tubing or other suitable material bored out smooth on its inner side, to act as a working-barrel, and is screwed into the T B, which T is, in turn, screwed on to the top of the tubing C, (see Fig. 1,) which extends down into the well. b shows the escape for the material to be pumped.

D D' show the connecting-rod, the lower end of which is attached to the sucker-rods within the tubing, and the upper end to the walking-beam or other power used to pump the well.

E E' show a tube, constructed, preferably, in two parts, connected by the thimble or collar H. (This tube, however, may be constructed of a single piece of pipe, in which case the collar H and the collar K will both be screwed on from the lower end of the tube E E'.) However, in the construction shown in the drawings, the tube E E' has a shoulder or collar, K, thereon, which may be welded on or screwed on. The upper end of the tube E E' is screwed into the collar F, which collar is fastened to the connecting-rod D D' by a set-screw, G, or other suitable fastening.

I I' are two ordinary leather or rubber cups, such as are commonly used in oil-well pumps; but they may be constructed of any suitable packing material.

J is a loose collar or thimble, tapering both ways from its center, around the tube E E', and between the cups I I', so that when the collar or thimble H is screwed down upon the upper cup, I, the cup I' being supported by the shoulder K, J is forced into the cups I I', so as to force the edges of both cups out against the inside of the barrel A, forming a perfect packing between E E' and the barrel A.

In operating this device the connecting-rod D D' is first connected with the sunken rods in the tubing, and with the walking-beam or other power used to pump the well, the tube E E' having first been slipped over D D', with the cups I I' and collar J in place. After these connections are made the beam is raised up to the top of the upward stroke. E E' is then

slipped down until the cups I I' are both within the barrel A. The nut H is then screwed down until the cups are forced outwardly against the working-barrel sufficiently tight to prevent the escape of the materials to be pumped. The collar F is then fastened firmly in place, so that it will not slip on the connecting-rod D D'.

In operating the pumping apparatus, the packing device described works up and down in the barrel A, packing the same completely, so that none of the materials being pumped can escape over the top of the tubing or barrel, which constitutes a continuation of same, but is forced out through the proper escape-pipe. When these cups become worn so as to leak, they may be tightened again and again by screwing down the collar H until they are worn out, and when worn so as to be useless can be replaced in a few minutes by unscrewing the parts and putting in new cups, thus saving much labor and expense to the operator of the well.

I have shown simple cups in my device as a convenient mode of packing the connecting-rod inside the working-barrel A. However, the same end may be accomplished in other methods, viz: One way would be to make the collars H and K with larger flanges and leave out the taper collar J, and fill the space between H and K with any suitable packing material, and by screwing down H the same might be made to pack the barrel A. And there are other ways in which it could be accomplished and work successfully; but I think the device I have shown is more simple and convenient to the operator than any other form of device accomplishing the end desired.

What I claim as new is—

1. A packer for connecting-rods of oil-wells, consisting of cups seated upon a sleeve, and having their free ends placed opposite to each other, and means, substantially as described, for forcing said cups outwardly against the side of the barrel, for the purposes set forth.

2. A packer for connecting-rods of oil-wells, consisting of cups seated upon a sleeve, and having their free ends placed opposite to each other, a collar having the form shown, and means, substantially as described, for forcing the cups against the side of the barrel, for the purposes set forth.

3. A connecting-rod arranged to work within the barrel of an oil-well, and having a packer removably attached thereto by means of a sleeve, provided with devices for holding said sleeve at any desired point upon the shaft, all combined and arranged substantially as described.

4. A connecting-rod arranged to work within the barrel of an oil-pump, and having a packer removably attached thereto by means of a sleeve, provided with a set-screw for holding said sleeve at any desired point upon the shaft, all combined and arranged substantially as set forth.

5. The combination of a connecting-rod of an oil-pump with a sleeve removably attached thereto, and having cups arranged as described, and means, substantially as described, for forcing the cups against the side of the barrel, for the purpose set forth.

In testimony whereof I, the said WILLIAM SKINNEN, have hereunto set my hand.

WILLIAM SKINNEN.

Witnesses:

CHAS. H. RICHARDS,
GEO. A. STURGEON.