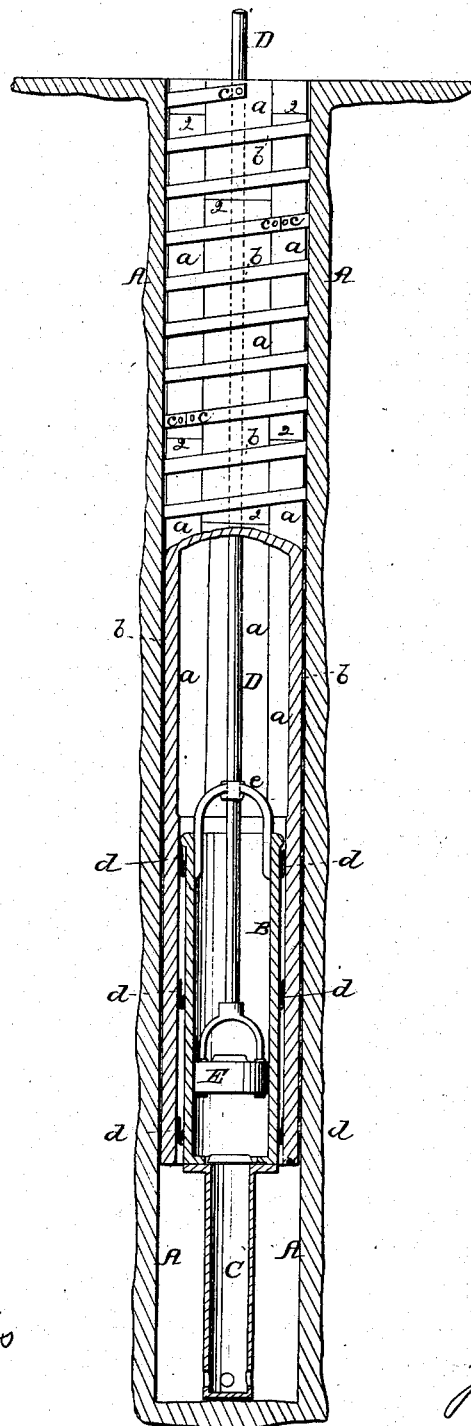


No. 47,224.

PATENTED APR. 11, 1865.

J. B. ROOT.
PUMP FOR OIL WELLS.



Witnesses:
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UNITED STATES PATENT OFFICE.

JOHN B. ROOT, OF NEW YORK, N. Y.

IMPROVEMENT IN PUMPS FOR OIL-WELLS.

Specification forming part of Letters Patent No. 47,224, dated April 11, 1865.

To all whom it may concern :

Be it known that I, JOHN B. ROOT, of the city, county, and State of New York, have invented a new and useful Improvement in Tubing and Pumps for Oil-Wells; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, which represents a vertical section of a well tubed and having the pump applied according to my invention.

In those regions where petroleum is found at a moderate depth the wells are commonly made of much larger bore than where it is found at greater depth, and the tubing of such wells with iron is very expensive. One object of this invention is to reduce the expense of tubing, and to this end a part of the said invention consists in the employment in an oil-well of tubing composed of wooden staves bound together with metal bands. This tubing would be difficult to withdraw from the well, and therefore, with a view to enable the pump to be drawn up for repairs without drawing up the tubing, another part of my invention consists in so fitting the pump-cylinder into the said tubing and so combining the pump rod and plunger with the cylinder as to provide for the drawing up of the pump.

To enable others skilled in the art to make and use my invention, I will proceed to describe it with reference to the drawings.

A is the bore of the well. *a a* are the wooden staves and *b b* the metal bands of which the tubing is composed. The tubing is made in short lengths or sections by placing the staves together and putting a band or bands of hoop iron around them. The bands might be in the form of hoops, but I prefer to make them of as great length as convenient, wind them spirally around the staves as represented in the drawing, and nail them at the ends as shown at *c c*. The several lengths are made so that in connecting with each other they will break joint, as shown at *z z*, and they are secured together by winding the bands around the joints and nailing one end of a band to one length, and the other end to the other length. In the shallow wells of large bore,

for which this kind of tubing is more particularly intended, the oil and water are met with at nearly the same levels. The water is not commonly stopped off by a seed-bag, but the pump is made to pump up both water and oil. The tubing is or may be, therefore, made large enough to fit snugly into the bore, as represented, so that as large a pump as practicable may be used. The metal band may be sunk in a groove formed in the exterior of the staves.

B is the pump-cylinder, having its exterior rather smaller than the interior of the tubing, and having provided around and secured to it two or more rings or bands, *d d*, of leather or other suitable material, to form a water-tight packing between it and the lowest length of tubing.

In order that the pump may be raised and lowered easily for necessary repairs without disturbing the tubing, the interior of the lower length of tubing is made a little smaller than that of all the other lengths, so that the pump, fitting it snugly, may be capable of passing freely up and down to and from it. The bottom of the pump-cylinder B is intended to stand at about the same level with the bottom of the tubing, which should not reach to the bottom of the bore, but leave the latter inclined for some distance for the free issue of the oil. The cylinder has firmly attached to its bottom the suction-pipe C, the bottom of which is intended to rest upon the bottom of the bore and support the pump at the proper height.

In order to provide for the drawing up of the pump from the tubing by means of its piston or plunger rod D there is secured firmly to the top of the cylinder a yoke, *e*, through which the said rod passes. When it is desired to draw up the pump, the rod is drawn up, and, after the piston or plunger E has been brought into contact with the yoke, it brings up the pump cylinder with it.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The employment in an oil-well of tubing composed of wooden staves and surrounding bands of metal, substantially as herein specified.

2. The arrangement of the pump-cylinder in combination with the tubing of wood, substantially as herein specified, whereby the said cylinder can be drawn up through the tubing without disturbing it.

3. The arrangement of the pump-cylinder in the interior of the tubing of wood in an oil-well; whereby the said cylinder and its piston

may be withdrawn together from the said tubing by means of the piston rod, substantially as herein described.

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Witnesses:

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