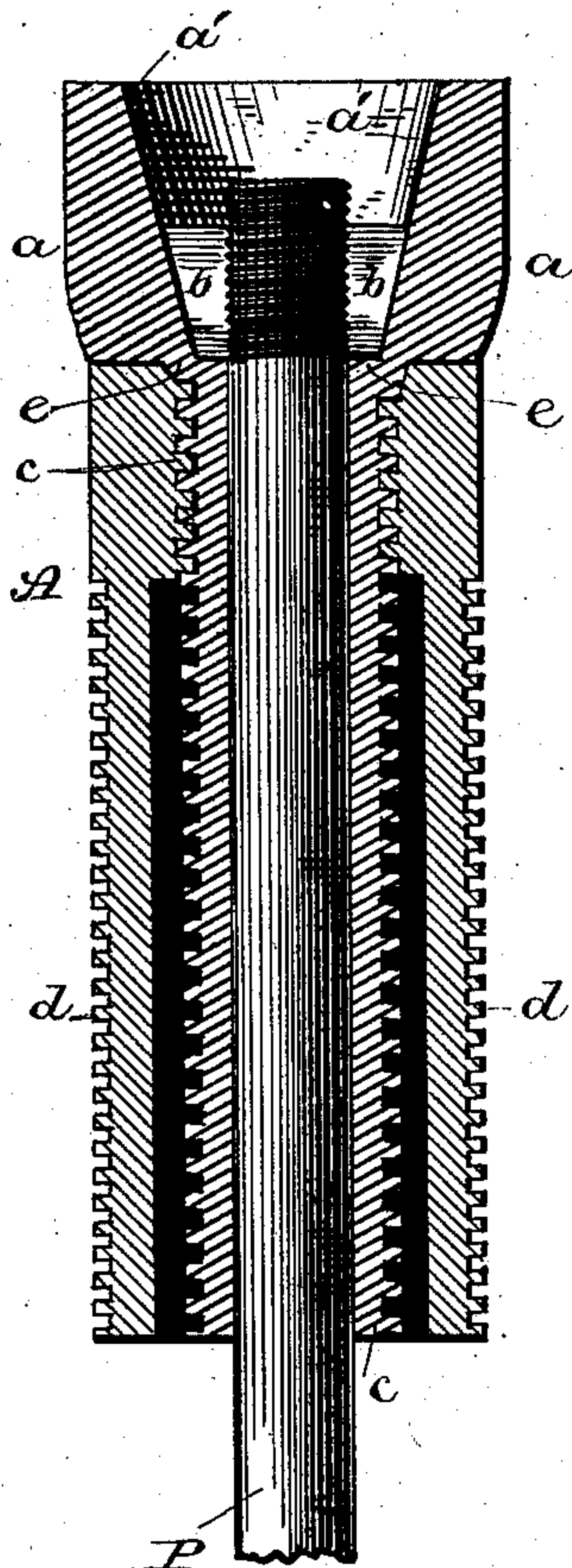


(No Model.)

S. K. & J. B. DUFF.
PIPE LIFTER FOR OIL WELLS.

No. 292,630.

Patented Jan. 29, 1884.



- WITNESSES. -

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UNITED STATES PATENT OFFICE.

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PIPE-LIFTER FOR OIL-WELLS.

SPECIFICATION forming part of Letters Patent No. 292,630, dated January 29, 1884.

Application filed October 15, 1883. (No model.)

To all whom it may concern:

Be it known that we, SAMUEL K. DUFF and JAMES B. DUFF, citizens of the United States, residing at Allegheny and Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Pipe-Lifters for Oil-Wells, of which the following is a specification, reference being had therein to the accompanying drawing.

Our invention relates to an improvement in pipe-lifters; and it consists, first, in the combination of a hollow cylinder, a hollow lifting-screw having a cylinder formed on its top, and a suitable nut which is applied to the upper end of the pipe which is to be raised upward; second, in the combination of a lifting-jack or other operating mechanism, which is provided with a male thread on its upper side and a female thread formed in its upper end, with a hollow screw, which is provided with a male thread, and which passes down through the top of the jack or operating mechanism, and which hollow screw has a cylinder formed upon its top, in which the nut which is to be applied to the upper end of the pipe is dropped, all of which will be more fully described hereinafter.

The object of our invention is to provide a means by which pipes in oil-wells can be raised upward by means of a lifting-jack or other similar operating mechanism.

The accompanying drawing represents a vertical section of a pipe-lifter embodying our invention.

A represents the upper part of a lifting-jack, of which *c* is the innermost and *d* the outer screw, both being at their lowest station. The part marked *a* is a hollow cylinder attached to or cast on top of the screw *c*, which screw is made hollow and raised or lowered when the ratchet (not shown) on the jack is operated. The inside of the cylinder *a* has outwardly-inclining walls *a'*, with shoulder *e* at the bottom. The shoulder serves to support four pieces, *b*, of a vertically-quartered circular nut, the outsides of which agree with the inclined wall of the

cylinder, and their inner vertical faces are screw-threaded. The nut, being divided into pieces, is thereby made expansive to adjust itself to various diameters of pipes that may be inserted into it.

The upper end of the pipe *P*, to be lifted from out a hole in the ground, is introduced through the lower end of the hollow screw *c* of the jack into the cylinder *a*, and the pieces *b*, in the form of a nut, laid around it, their inner threaded faces in contact with the pipe. If, now, the ratchet on the jack be operated to raise the screws of the jack, and with it the cylinder *a*, the pipe *P* resists the upward movement, and thereby causes the pieces *b* to close on it, and with their threaded sides to obtain a firm hold or grip on the pipe. The outer form of the pieces *b* prevents them from sliding down in the cylinder; but if they should, by accident, slide, the shoulder *e* would support them. The pieces *b* being raised with the cylinder *a* by the screw *c* of the jack, the pipe held between the pieces is drawn up with them to a height the screw may attain. When arrived at this point, the action of the ratchet is to be reversed, whereby the screws of the jack are lowered. The pipe while the screws are lowering, being held by the earth surrounding it, remains stationary, and thereby causes the descending pieces *b* to be slightly lifted up, whereby they lose their hold and slide down without changing their positions around the pipe. If again raised by the ratchet, the hold of the pieces *b* on the pipe is instantly renewed at a distance below their former grip equal to the difference between the lowest and highest points of the top of the screw *c*. The operation of raising and lowering the screws in the jack has to be repeated as many times as the rising number of feet of the inner screw is contained in the number of feet of length of the pipe.

Having thus described our invention, we claim—

1. In a device for lifting pipes, the combination of a hollow lifting-screw, provided with a hollow cylinder upon its upper end,

with an operating jack or mechanism for raising the hollow screw upward, substantially as shown.

2. In a device for lifting pipes, the combination of a hollow screw having a cylinder formed upon its top, the jack A, and the nut B, which is applied to the upper end of the pipe inside of the cylinder, substantially as set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

SAM. K. DUFF.
JAMES B. DUFF.

Witnesses:

R. H. HERRON,
T. F. LEHMANN.