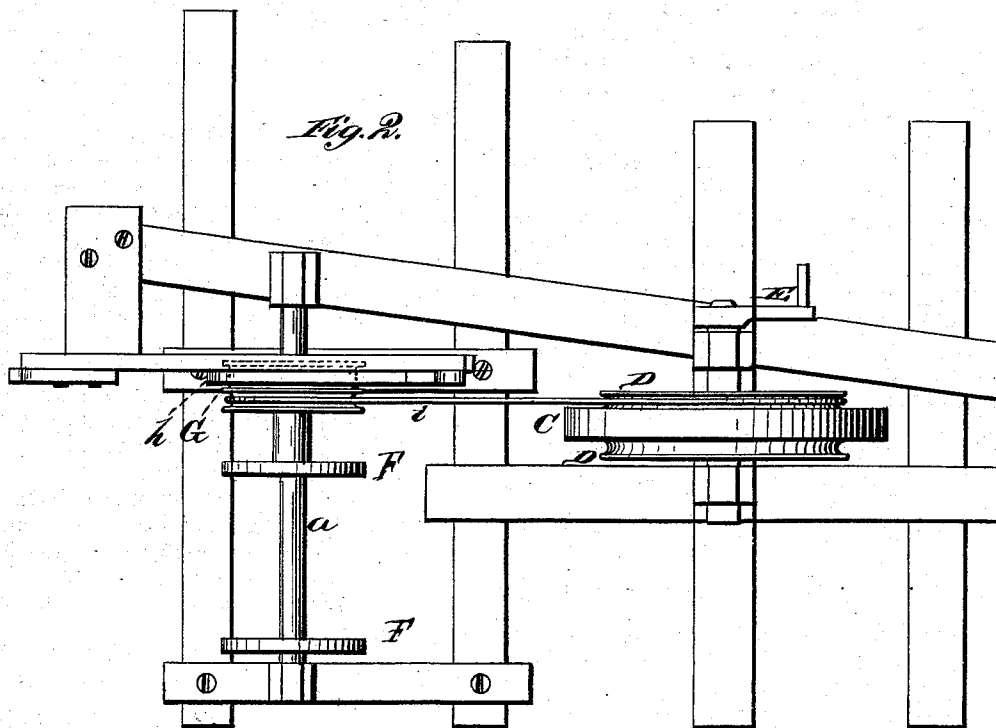
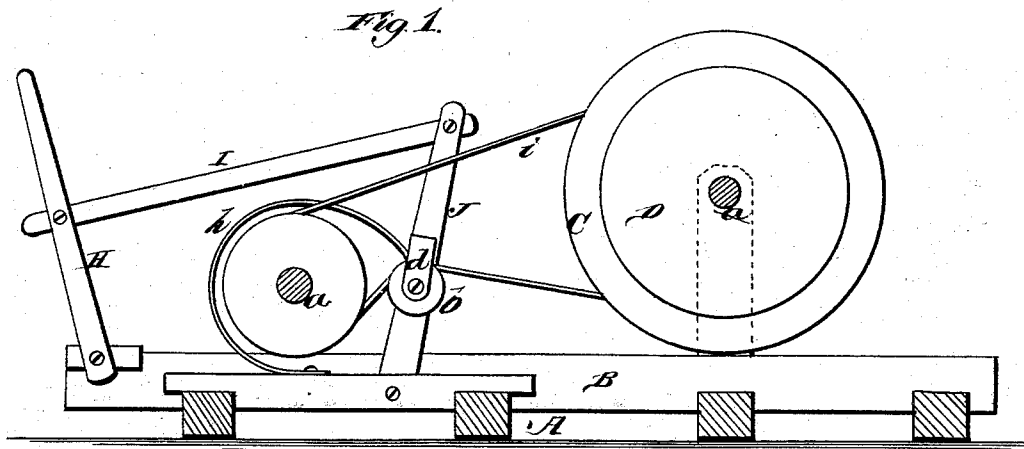


B. E. WANGAMAN.  
Sand-Pump Reel Mechanism.

No. 219,542.

Patented Sept. 9, 1879.



WITNESSES  
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# UNITED STATES PATENT OFFICE.

BOAZ E. WANGAMAN, OF DERRICK CITY, PENNSYLVANIA.

## IMPROVEMENT IN SAND-PUMP-REEL MECHANISMS.

Specification forming part of Letters Patent No. 219,542, dated September 9, 1879; application filed July 3, 1879.

*To all whom it may concern:*

Be it known that I, BOAZ E. WANGAMAN, of Derrick City, in the county of McKean and State of Pennsylvania, have invented certain new and useful Improvements in Sand-Pump-Reel Mechanisms; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a longitudinal section of my sand-reel, and Fig. 2 is a plan view of the same.

The nature of my invention relates to certain improvements on sand-reels used in drilling oil-wells, for removing the sediment or drillings, as will be hereinafter more fully set forth.

The annexed drawings, to which reference is made, fully illustrate my invention.

A A represent sills, to which a portion of the derrick-floor B is attached. C is the band-wheel, with pulleys D D' on the sides, for running the sand-reel and bull-wheels. E is the main crank on the shaft or journal of the wheel C. *a* is the shaft of the sand-reel, on which are flanges F F, to form the spool for the sand-line. On the same shaft is a combined brake and tug pulley G. H is the lever by which the sand-reel is operated, said lever being by a reach, I, connected with the main lever J.

The main lever J carries a tightening-pulley, *b*, over which is a guard, *d*.

*h* is a brake-strap over the pulley G, by means of which the pulley G is prevented from rotating, when necessary, by simply pushing the lever H forward and causing the brake-strap to bear upon said pulley.

The pitman that operates the walking-beam, when drilling, is to be attached to the crank E.

*i* is the rope or belt passing around the pulleys D and G and over the tightening-pulley *b*.

In this class of machines the sand-line is a

rope or cable wound on the sand-reel, and the reel is driven by the engine. On the end of this line is attached a sand-pump, for removing the sediment or drillings that accumulate in the well in the process of drilling.

The sand-pump is put in the well, and the weight of the sand-pump unwinds the sand-line from the reel as it lowers in the well. The sand-pump is so arranged that when it strikes the bottom of the well it fills with the sediment that is in the bottom of the well, the back-brake preventing the pump from striking with such force that would be likely to injure the same. The pump is then drawn by applying the tightening-pulley to the round band *i* of the sand-wheel.

Heretofore the sand-reels used have been principally friction-reels, which have been found very objectionable on account of the great wear and strain on the parts.

By my invention of running the reel with a round band the machine runs smoother and is easier on the driller, and there is not so much strain on the reel or rig, and it is not as susceptible to wear. The reel is so arranged that by pressing forward the lever H it tightens the round band and puts the reel in motion for raising the sand-pump out of the well. By pressing back the lever it slackens the round band, and at the same time applies the back-brake to stop or hold the reel, thereby giving the driller perfect control of the reel.

I claim—

In a sand-reel, the combination, with the band-wheel C, of the pulley D, round band *i*, pulley G on the reel, brake-strap *h*, the levers H J, with connecting-bar I, and the tightening-pulley *b*, substantially as and for the purposes herein set forth.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

B. E. WANGAMAN.

Witnesses:

H. C. DORNAN,  
M. F. HOLTZER.