E. E. SWETT.

Rigs for Drilling Oil and other Wells.

No. 205,105. Patented June 18, 1878.

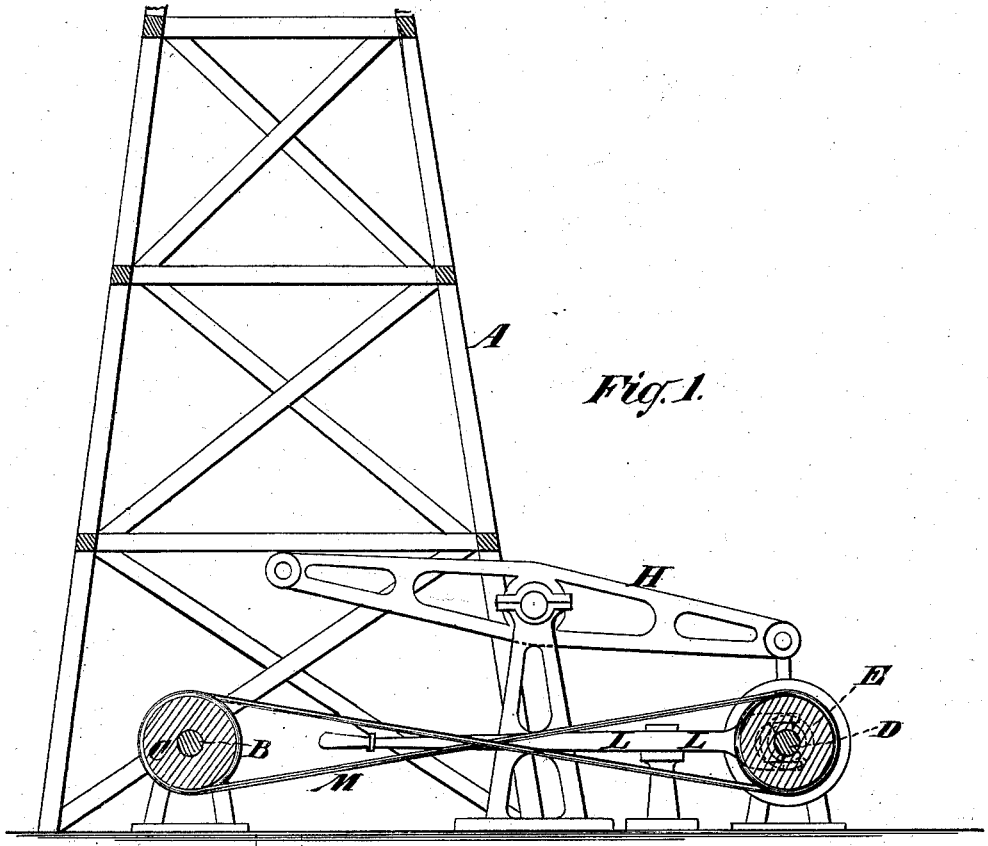

Fig. 1.

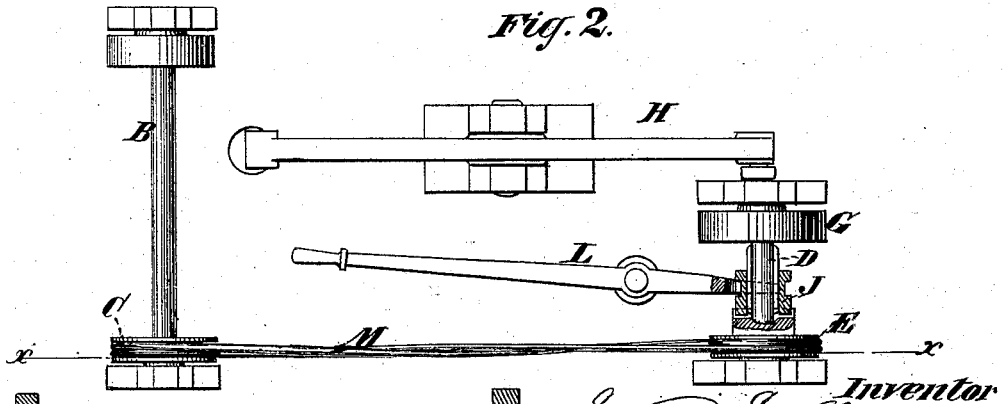

Fig. 2.

Witnesses

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UNITED STATES PATENT OFFICE.

EDWARD E. SWETT, OF OLEAN, NEW YORK.

IMPROVEMENT IN RIGS FOR DRILLING OIL AND OTHER WELLS.

Specification forming part of Letters Patent No. **205,105**, dated June 18, 1878; application filed February 20, 1878.

To all whom it may concern:

Be it known that I, EDWARD E. SWETT, of Olean, in the county of Cattaraugus and State of New York, have invented a new and useful Improvement in Oil-Rigs; 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, forming part of this specification.

My invention relates to certain improvements in mechanism employed in the drilling of oil or other wells; and it consists in certain details of construction, arrangement, and combination of parts, whereby the necessity for throwing off the tug rope or chain from the tug-pulley and bull-wheel is obviated, and whereby, also, said rope or chain is prevented from slipping on the tug-pulley and bull-wheel, all as hereinafter particularly described.

In most oil-rigs as heretofore constructed it has been necessary to throw the tug rope or chain on the tug-pulley and bull-wheel whenever the drilling-tools are to be removed, and to throw it off again after the tools are removed; and as said tug rope or chain is necessarily tight, in order as much as possible to prevent slipping, the operation is attended with considerable difficulty and loss of time.

This disadvantage is overcome by my invention. The slipping of the tug-rope has also been a great annoyance, causing vexatious delay. This is also overcome by my invention.

In the accompanying drawing, Figure 1 is a vertical sectional view of an apparatus embodying my improvements. Fig. 2 is a top view, partly in section.

A represents a derrick, which may be of the usual or any suitable description. B is the bull-wheel shaft, carrying the bull-wheel or pulley C. D is the tug-wheel shaft, carrying the tug-pulley E and a band-wheel, G. One end of the shaft D connects, by means of a crank and pitman, with one end of the working-beam H, the other end of which is immediately over the well and under the derrick, and is provided with means for attachment of the drilling-tools. The shaft D carries a toothed clutch, J, attached to it by a spline and feather, so as to revolve with said shaft, but be allowed to slide longitudinally thereon, the sliding motion being imparted to the clutch by means of a clutch-lever, L, which may be readily manipulated from the derrick. The clutch J is arranged for engagement with the tug-pulley E, which is loose on the shaft D. The tug rope or chain M runs from the tug-pulley E to the bull-wheel or pulley C, for the purpose of driving the latter; and said rope or chain M is given an extra turn around each of said pulleys, which effectually prevents it from slipping.

The above mechanism receives motion from the engine by means of a band passing over the band-wheel G.

The tug-pulley E has teeth or lugs formed on one side for the engagement of the clutch J, hereinafter described.

When the bull-wheel is to be driven the clutch J is thrown into engagement with the tug-pulley E by means of the lever L, and when the bull-wheel is to be stopped the clutch is disengaged from the tug-pulley. By this means the throwing of the tug rope or chain on or off the pulley, in order to drive or to stop the bull-wheel, is rendered entirely unnecessary. By this means, also, the bull-wheel may be rotated in either direction, without crossing or uncrossing the tug-rope, by simply reversing the engine.

By the above-described construction and arrangement of parts the operation of removing the tools from the well is facilitated and economy of time and labor is secured.

I am aware that in the invention of C. Homer Brawley and Dewitt C. Brawley tug-pulleys sliding loosely on the shaft are shown, said pulleys being provided with clutches, one being a friction-clutch and the other being a toothed clutch. I do not, therefore, broadly claim as my invention the combination of a clutch with the tug-pulley; but

What I do claim as my invention, and desire to secure by Letters Patent, is expressed in the following claim:

1. In an oil-rig, the combination of the

shaft having the band-wheel G rigidly attached thereto and the loose tug-pulley provided with lugs, the toothed clutch J sliding longitudinally on the said shaft and the clutch-lever for operating the said clutch to engage or disengage the said tug-pulley, all constructed and operating substantially as and for the purpose specified.

2. The combination, with the tug-pulley E and bull-wheel C, of the tug rope or chain M, having an extra turn around each of said wheels to prevent slipping, substantially as and for the purpose described.

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Witnesses:
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