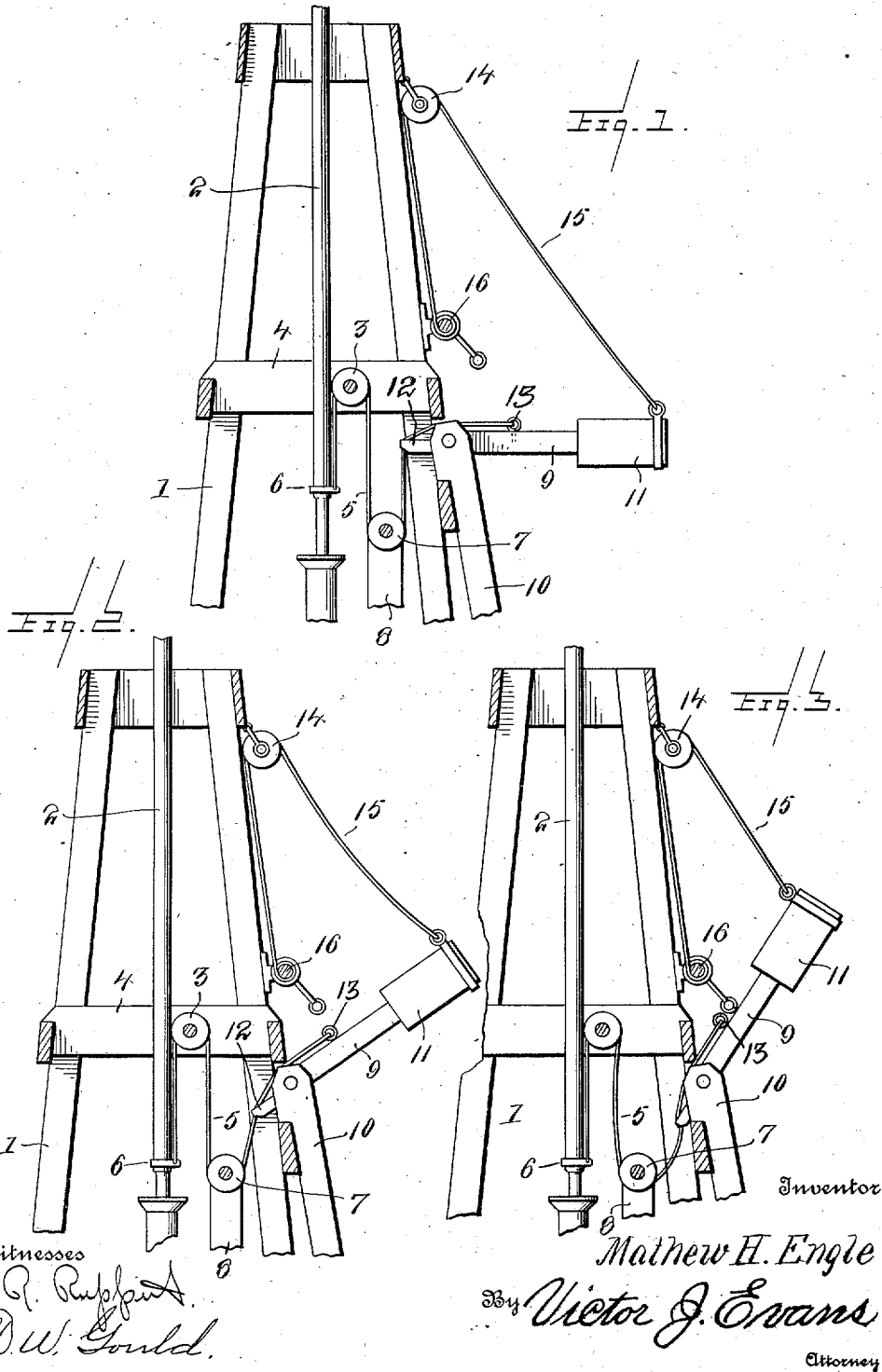


M. H. ENGLE.
ATTACHMENT FOR WINDMILLS.
APPLICATION FILED MAY 3, 1911.

1,019,142.

Patented Mar. 5, 1912.



UNITED STATES PATENT OFFICE.

MATTHEW H. ENGLE, OF SAN ANTONIO, TEXAS.

ATTACHMENT FOR WINDMILLS.

1,019,142.

Specification of Letters Patent.

Patented Mar. 5, 1912.

Application filed May 3, 1911. Serial No. 624,754.

To all whom it may concern:

Be it known that I, MATTHEW H. ENGLE, a citizen of the United States, residing at San Antonio, in the county of Bexar and State of Texas, have invented new and useful Improvements in Attachments for Windmills, of which the following is a specification.

The invention comprehends generally the provision of means for increasing the pumping capacity of windmill or other lifting pumps, being directed particularly to an adjustable counterbalance for the plunger stem of apparatus of this character whereby lifting the weight of the plunger stem in its up stroke is practically removed from the work of the wheel or other source of power, the invention also embracing means whereby the counterbalance may be, without disengagement, shifted to non-functional position and the weight of the plunger stem thrown back on the wheel.

The invention consists in the novel arrangement and construction of parts now to be described, taken in connection with the accompanying drawings, in which like characters of reference indicate like parts in the several views, and wherein is shown the preferred details of the invention.

In the drawings, Figure 1 is a broken side elevation showing the improved counterbalance operatively connected to the framework of a windmill, the plunger stem being at the limit of its upward movement, and Fig. 2 is a similar view illustrating the plunger stem at the limit of its downward movement. Fig. 3 is a broken side elevation showing the counterbalance swung to upright position.

Referring to the drawings, 1 denotes the lower portion of the frame work of a windmill pump and 2 the plunger stem thereof, of ordinary construction and relative position. A sheave 3, suitably mounted on cross brace 4 of the framework, is sufficiently spaced from the latter to approximately align the sheave groove with the medial line of the stem 2 in order that when pull is exerted on lifting cable 5, passing over said sheave and attached to connecting strap 6 on said stem, stress will be exerted upon the latter in practically the line of its normal movement, it being desirable of course that the plunger stem move in a fixed vertical path.

7 denotes a sheave suitably hung upon

stanchion 8 below sheaves 3 in position to receive and guide lifting cable 5, as shown.

The counterbalance comprises beam 9, pivotally mounted intermediate its terminals in a fixed support 10 and provided at or near one terminal with a balance 11 of any preferred form, as a box or the like adapted to receive weights varying in accordance with the counterbalancing effect desired, or the balance box may itself be adjustable along the beam, as found convenient, it being understood that in operation, the weight of the counterbalance as a whole is adjusted to be equal or slightly less than the weight of the stem 2.

The lifting cable 5 passes over sheave 3, beneath sheave 7 and thence upwardly and through an aperture formed in an extension 12 of beam 9, passing thence along the latter and being securely attached thereto beyond its pivotal connection, as at 13.

14 indicates a sheave attached to an upper beam of the framework designed to receive and guide cable 15, the terminals of which are attached respectively to the outer end of the balance 11 and to a windlass 16, rigidly connected to the framework, whereby, when desired the beam 9 may be swung to practically vertical position and the counterbalancing effect thereof eliminated, it being understood that said windlass is of course provided with a suitable brake to maintain the beam in said position.

The sheaves and cables being disposed as illustrated in Fig. 1 with the plunger stem at the limit of its upward movement, it is obvious that on the down stroke of said stem, the weight of the latter will raise the counterbalance beam through pull on cable 5, the wheel at such time acting merely against water pressure, and, on the up stroke the work of lifting the stem will be removed from the wheel by the counterbalancing effect of the beam and balance 11 in returning to normal lowered position, the length of cable 15 being of course adjusted, through the medium of windlass 16, to maintain said beam and balance in approximately horizontal position at the termination of said upstroke of the plunger stem. Assuming that it should be found expedient at any time to shift the weight of the plunger stem back on the wheel, as during heavy winds requiring the wheel to be steadied, this result can be accomplished by raising the beam and balance by means of the cable

and windlass to upright position closely adjacent the framework, as shown in Fig. 3, when, as evident the pump will operate entirely independent of the counterbalance.

5 Having thus described the invention, what is claimed is—

1. A counterbalance for the plunger stem of a windmill comprising a beam pivoted to the windmill frame and including a weighted portion and a portion projecting beyond the pivot toward the stem, a plurality of sheaves mounted on the frame, and a cable having its terminals secured to the stem and beam respectively and engaging the sheaves and projecting portion.

2. A counterbalance for a plunger stem comprising a pivoted beam including a weighted portion on one side of the pivot and a portion projecting toward the plunger stem on the other side of the pivot, a flexible connection between the stem and the beam engaging the projecting portion, and man-

ually operable means including a cable connected with the beam and a windlass on which the cable may be wound to limit the movement of the beam.

3. A counterbalance for a plunger stem comprising a pivoted beam including a weighted portion on one side of the pivot and a portion projecting toward the stem on the other side of the pivot, a suitably guided cable connected to the stem and to the weighted portion of the beam and engaging the projecting portion of said beam, a windlass supported above the beam, and a suitably guided cable connected to the windlass and to the beam to limit the movement of the latter.

In testimony whereof I affix my signature in presence of two witnesses.

MATTHEW H. ENGLE.

Witnesses:

JAMES ROUTLEDGE,
FRANCES SMITH ROUTLEDGE.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."