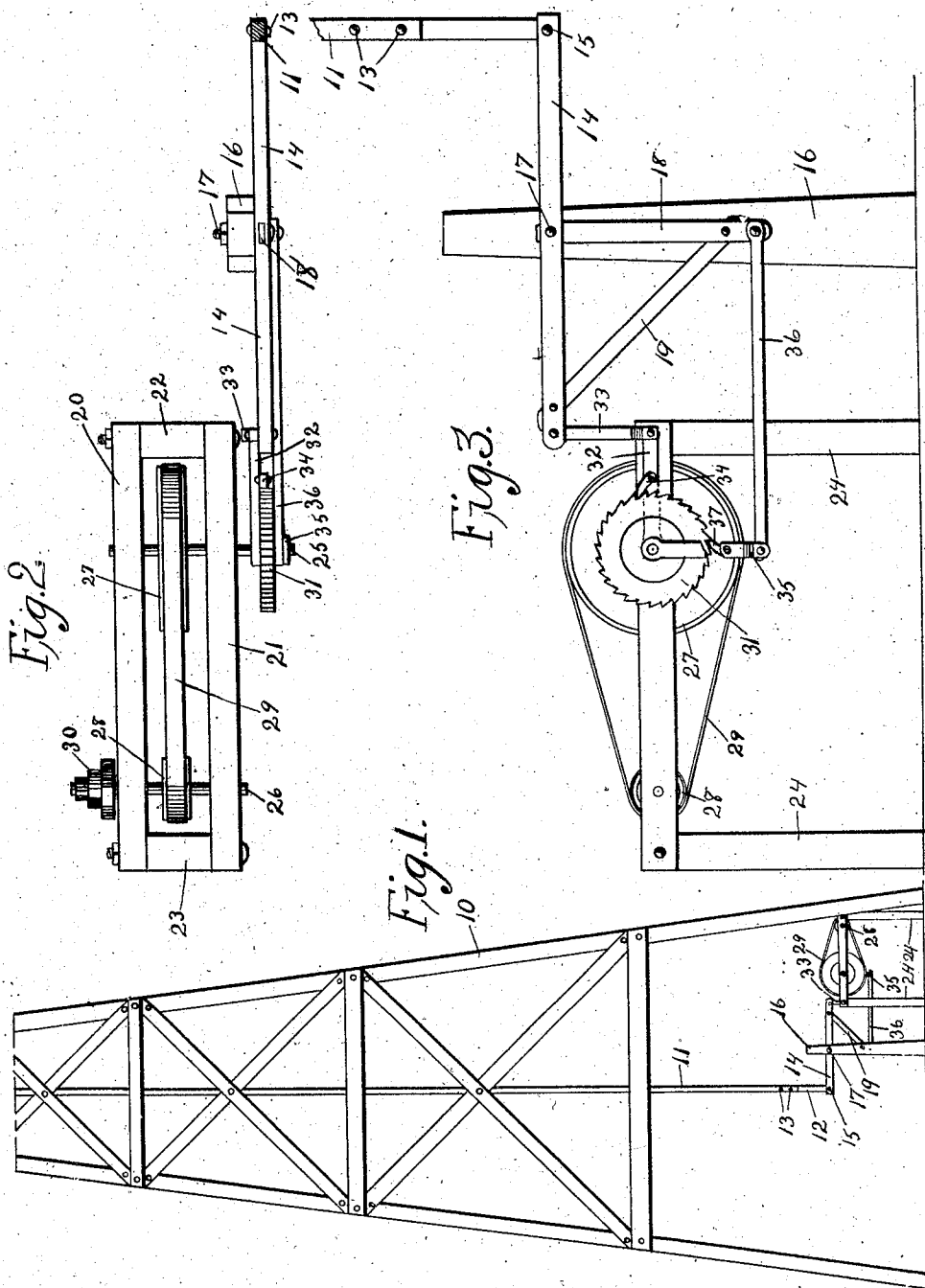


O. M. MENDENHALL.
SPEED JACK FOR WINDMILLS.
APPLICATION FILED JUNE 24, 1905.



Witnesses:
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UNITED STATES PATENT OFFICE.

OLIVER MORTON MENDENHALL, OF NEWTON, IOWA.

SPEED-JACK FOR WINDMILLS.

No. 827,252.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, OLIVER MORTON MENDENHALL, a citizen of the United States, residing at Newton, in the county of Jasper and State of Iowa, have invented a certain new and useful Speed-Jack for Windmills, of which the following is a specification.

The objects of my invention are to provide a mechanism for converting the reciprocating motion of a rod, such as a windmill rod or pitman, into a rotary motion to utilize the power for operating or running machinery which is driven from a belt and a rotary shaft.

It is my object, further, to provide lever-operated pawls which provide for a continuous and steady rotary movement as the motion is being converted from a reciprocating to a rotary movement.

My invention consists in certain details in the construction, arrangement, and combination of the various parts of the device whereby the objects contemplated are attained, as hereinafter more fully set forth, pointed out in my claim, and illustrated in the accompanying drawings, in which—

Figure 1 shows a portion of a windmill-tower with my device connected with its reciprocating rod. Fig. 2 is a plan view of my device connected with the windmill-rod, which is shown in cross-section; and Fig. 3 is a side elevation of my complete device looking at the opposite side of it from that shown in Fig. 1.

Referring to the accompanying drawings, I have used the reference-numeral 10 to indicate a windmill-tower, the numeral 11 to indicate the windmill-rod, and the numeral 12 to indicate a short rod which is detachably secured to the windmill-rod by the bolts 13 and which is pivoted at its lower end to a lever 14 by means of the bolt 15. I have provided a post 16, to which the lever 14 is pivoted and by means of the bolt 17. Extending from and at right angles to the central portion of the lever 14 is an arm 18. Connecting the ends of the lever 14 and the arm 18 is a brace 19, designed to hold them rigidly in position relative to each other. At the opposite side of the post 16 from the rod 11 is a wheel-bearing frame having two sills 20 and 21, which are connected at their ends by the cross-sills 22 and 23. This frame is mounted on four legs, each of which I have numbered 24. Extending across the wheel-bearing frame, mounted in the sills 20 and 21 and at one end of it, is a shaft 25. Extending across

the other end of the frame and rotatably mounted in the sills 20 and 21 is a shaft 26. Mounted on the shaft 25 and between the sills 20 and 21 is a band-wheel 27. Mounted on the shaft 26 and between the sills 20 and 21 is a band-wheel 28. Passing around the band-wheels 27 and 28 is a belt 29, so arranged that as the band-wheel 27 is driven the band-wheel 28 will be driven. Mounted on one end of the shaft 26 and outside of the sill 20 is a series of band-wheels 30, with which the machine to be driven by a rotary shaft is connected by a belt.

Mounted on the shaft 25, rigidly secured thereto and outside of the sill 21, is a ratchet 31. Pivoted to the shaft and between the ratchet 31 and the sill 21 is a rock-arm 32, which is connected at its free end to the free end of the lever 14 by means of a link 33. Pivoted to the side of the rock-arm 32 which is adjacent to the ratchet 31 is a pawl 34, so arranged that as the free end of the lever 14 is drawn upwardly the free end of the rock-arm 32 will be drawn upwardly and the pawl which engages the ratchet 31 will be forced upwardly and cause the ratchet 31 to be rotated slightly.

Pivoted to the shaft 25 and outside of the ratchet 31 is a rock-arm 35, the free end of which is connected with the free end of the arm 18 by means of the link 36. Pivoted to the inside of the rock-arm 35 is the pawl 37, which stands normally in engagement with the ratchet 31 and is so arranged that as the free end of the arm 18 moves away from the ratchet 31 the arm 35 will be oscillated and the pawl will also be oscillated to rotate the ratchet 31. Inasmuch as the two pawls 34 and 37 are being operated continuously by the lever 14 and arm 18 as the windmill-rod is reciprocated, and these pawls are so arranged relative to the ratchet that when one of them is rotating the ratchet, the other will be sliding over the ratchet, consequently the band-wheel 27 will be continuously rotated, as will also the band-wheel 28, and a continuous rotary movement will be imparted to the band-wheels 30 while the windmill-shaft is being reciprocated; the speed of the rotary shaft being, of course, dependent upon the speed of the reciprocating shaft.

I claim—

A device for the purpose set forth, comprising a frame, a vertically-swinging lever fulcrumed at an intermediate point of its length on said frame and having inner and outer

arms and also having an arm 18 depending
from its fulcrum-point and disposed at right
angles to the inner and outer arms, a shaft
 journaled in the frame, a ratchet fixed on
5 said shaft, rock-arms loosely mounted on
the shaft and arranged at right angles to
each other, a vertical link connecting the in-
ner arm of the lever and the adjacent rock-
arm, a horizontal link connecting the depend-
10 ing arm 18 of the lever and the other rock-

arm, a pawl carried by one rock-arm and ar-
ranged to turn the ratchet when the lever is
rocked in one direction, and a pawl carried by
the other rock-arm and arranged to turn the
ratchet when the lever is rocked in the oppo- 15
site direction.

OLIVER MORTON MENDENHALL.

Witnesses:

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