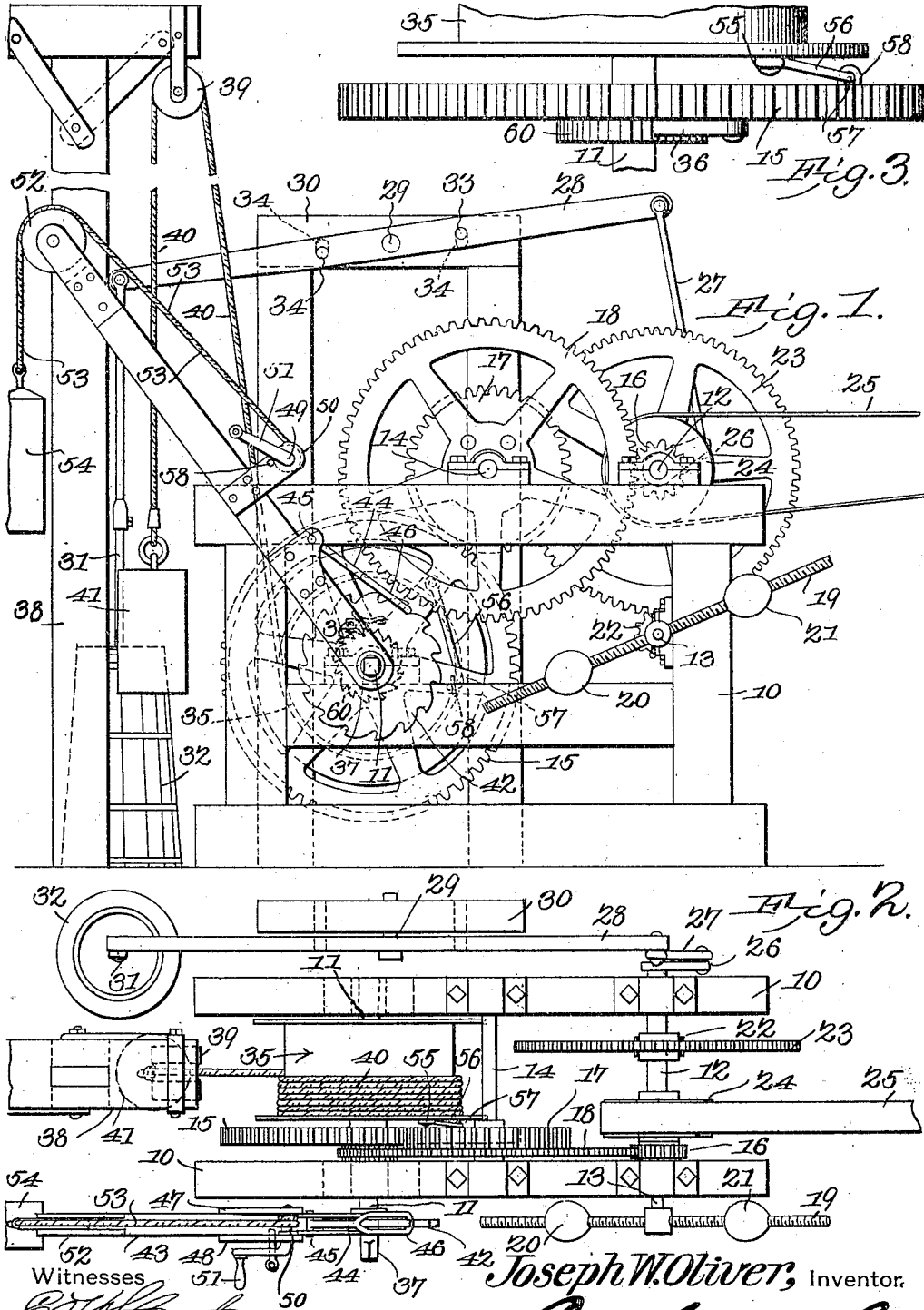


No. 838,577.

PATENTED DEC. 18, 1906.

J. W. OLIVER.
CHURN POWER.

APPLICATION FILED OCT. 5, 1905.



Witnesses
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UNITED STATES PATENT OFFICE.

JOSEPH W. OLIVER, OF WARRENSVILLE, PENNSYLVANIA.

CHURN-POWER.

No. 838,577.

Specification of Letters Patent.

Patented Dec. 18, 1906.

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To all whom it may concern:

Be it known that I, JOSEPH W. OLIVER, a citizen of the United States, residing at Warrensville, in the county of Lycoming and State of Pennsylvania, have invented a new and useful Churn-Power, of which the following is a specification.

This invention relates to motors operative by the power generated by weights, and has for its object to improve the construction and increase the efficiency and utility of devices of this character.

Another object of the invention is to produce a device of this class in which the motion may be reversed when required.

With these and other objects in view, which will appear as the nature of the invention is better understood, the invention consists in certain novel features of construction, as hereinafter fully described and claimed.

In the accompanying drawings, forming a part of this specification, and in which corresponding parts are denoted by like designating characters, is illustrated the preferred form of the embodiment of the invention capable of carrying the same into practical operation, it being understood that various changes in the form, proportions, and minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention within the scope of the appended claim.

In the drawings, Figure 1 is a side elevation. Fig. 2 is a plan view of the improved apparatus. Fig. 3 is an enlarged detail of the detachable coupling attachment.

The improved device comprises a supporting-frame 10, having a main driving-shaft 11, a power-transmitting shaft 12, a shaft 13, and one or more intermediate shafts 14, mounted for rotation thereon by suitable bearings. The shaft 11 is provided with a main or master wheel 15, and the driven shaft 12 is provided with a pinion 16, while the intermediate shaft 14 is provided with gear-wheels 17 18 of different sizes and engaging the gear 15 and pinion 16. By this means the motion of the wheel 15 will be transmitted to the shaft 12 and at increased speed.

Attached transversely to the shaft 13 is a threaded rod 19, upon which two weighted balls 20 21 are disposed and adjustable longitudinally of the rod by simply rotating them thereon. The shaft 13 also carries a pinion 22, and the shaft 12 carries a gear 23, engag-

ing the pinion, the weighted rod forming a fly-wheel to control the speed of the device.

The shaft 12 is provided with a belt-pulley 24, over which a belt 25 leads to illustrate one manner of utilizing the motion of the shaft 12. A crank 26 is also attached to the shaft 12 and coupled by a rod 27 to one end of a lever 28, the latter being pivoted at 29 to a supporting-frame 30. The lever 28 may be employed for transmitting power to devices of various kinds—for instance, the dasher-rod 31 of a churn, the body of which is represented at 32. The lever 28 is provided with a plurality of spaced apertures 33, and the frame 30 is also provided with corresponding apertures (indicated at 34) to enable the pin 29 to be adjusted to alter the leverage, if required.

The gear-wheel 15 is loose upon the shaft 11, while a ratchet-wheel 60, which for the purpose of this description is referred to as the "primary ratchet," and a drum are fast upon the shaft, the gear-wheel also carrying a pawl 36, engaging the primary ratchet, the terminal of the shaft 11 being square, as at 37, to receive a crank for winding the drum when required. A post or other elevated structure 38 is utilized to receive a cable-sheave 39, the post or other supporting structure being of any required height, but as high as possible to increase the length of time which the apparatus will operate. A cable 40 is connected at one end to the drum and leads thence over the guide-sheave 39 to a weight 41. By this means the gravity of the weight 41 will cause the drum to rotate the shaft 11, and the latter being connected to the driven shaft 12 through the ratchet-wheel 60 and its pawl 36 and the train of gears rapidly rotates the latter, and thus supplies the required power. When the weight runs down, it can be readily rewound by applying a crank to the square end 37 of the shaft 11.

Attached to the shaft 11 is a relatively large ratchet-wheel 42, having hooked teeth, and which is referred to as the "auxiliary ratchet." Swinging upon the shaft 11 is a lever-arm 43, carrying a rod 44, pivoted at 45 to the lever and with a loop 46 at the free end for engaging the teeth of the auxiliary ratchet-wheel 42, as shown.

Mounted for rotation between bearings 47 48 on the lever 43 is a shaft 49, carrying a small cable drum or pulley 50 and an operating-crank 51. The free end of the lever 43

is provided with a cable-guide sheave 52, over which a cable 53 leads from the drum 50, the outer end of the cable being connected to a weight 54. By having the weight 54
5 connected through the medium of the cable 53 to the drum on the lever 43 the latter may be moved to elevated or operative position without the necessity of lifting the weight 54, said weight being subsequently elevated
10 by turning the crank 51. A stop-pin 59 may be employed to hold the crank 51 stationary after the weight is wound up. Pivoted at 55 to the main drum 35 is a rod 56, terminating in a hook 57, adapted to engage an eye or
15 staple 58 on the wheel 15. By this simple means the drum 35 and gear-wheel may be coupled when the lever 43 is to be employed.

When the device is being operated by the power of the weight 41, the lever-arm 43 and
20 its attachments remain out of action, the coupling-rod 56 being connected to the gear-wheel 15; but if it is desired to reverse the motion the pin 58 is removed and the rod 56 uncoupled, the lever-arm 43 being subse-
25 quently elevated until its guide-sheave 52 is at its highest point, and the pawl 44 connected to the wheel 42. The lever 43 is then propped in its upward position and the cable 53 wound upon the drum 50, with the result
30 of elevating the weight 54. The prop is then released from the lever 43, so that the weight

in falling will carry the lever 43 downward with it, and thus rotate the wheel 15 in the opposite direction and correspondingly reverse the motion of the driven shaft 12. 35
When the weight 54 has arrived at its lowest point, the operation of winding it up is repeated, and so on as long as required.

Having thus described the invention, what is claimed is— 40

In a device of the class described, a driving-shaft, a driven shaft, connecting means between said shafts, means for detachably coupling said driving-shaft to said connecting means, a ratchet-wheel carried by said 45 driving-shaft, a lever-arm swinging at one end from said driving-shaft and having a cable-guide at the other end, a pawl carried by said lever for engagement with said ratchet-wheel, a winding-drum mounted for 50 rotation upon said lever-arm, means for rotating said winding-drum, and a cable connected at one end to said winding-drum and leading thence over said cable-guide and terminating in a weight. 55

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

JOSEPH W. OLIVER.

Witnesses:

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