W. S. OSWALD.

MECHANICAL MOVEMENT.

APPLICATION FILED OCT. 31, 1908.

915,306. Patented Mar. 16, 1909.

Fig. 1.

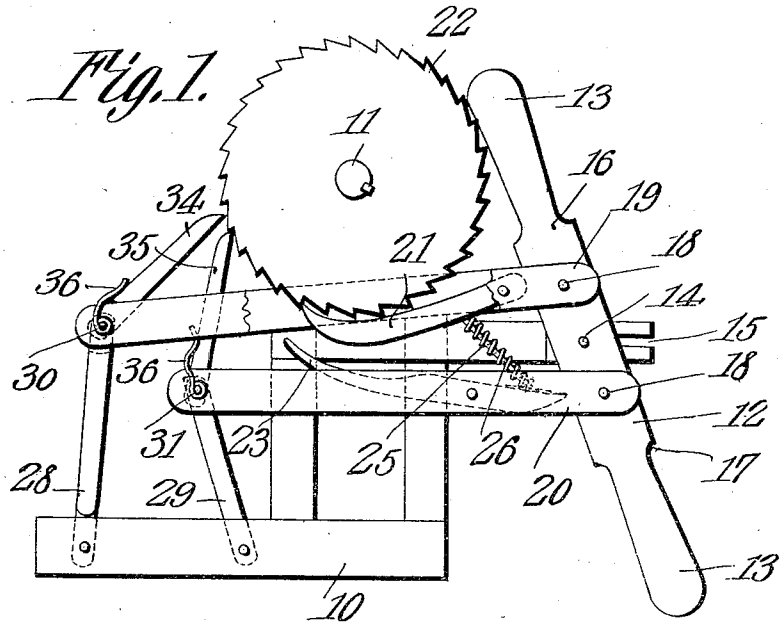
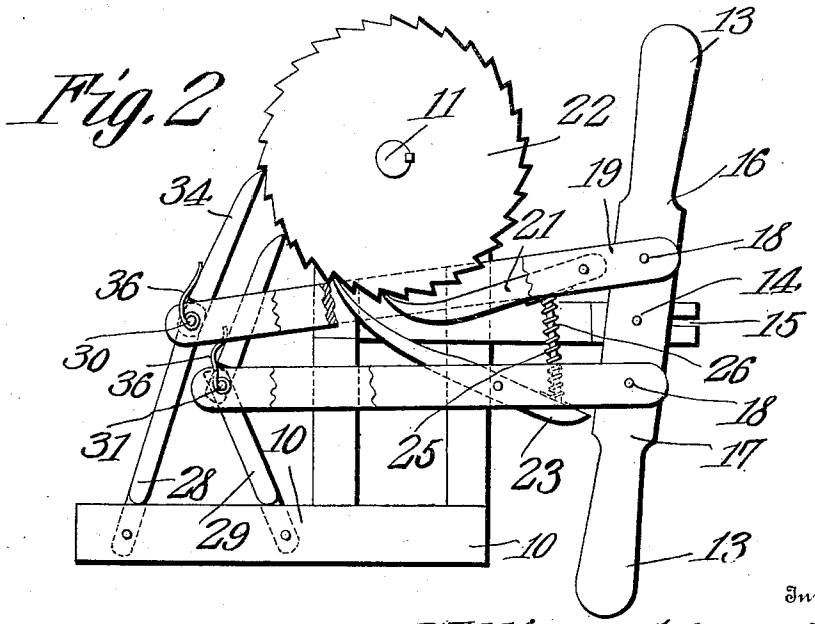


Fig. 2



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MECHANICAL MOVEMENT.

No. 915,306. Specification of Letters Patent. Patented March 16, 1909.

Application filed October 31, 1908. Serial No. 460,512.

To all whom it may concern:

Be it known that I, WILLIAM S. OSWALD, a citizen of the United States, residing at Honey Grove, in the county of Fannin and State of Texas, have invented a new and useful Mechanical Movement, of which the following is a specification.

This invention relates to ratchet feeding mechanisms, and has for its principal object to provide a novel construction in which movement is imparted from a rocking lever to a ratchet wheel through the medium of a plurality of pawls that are so connected to the lever as to operate on the ratchet wheel during movement of the lever in both directions.

A further object of the invention is to provide a mechanism of this type in which a pair of sets of pawls are so connected to an operating lever that the pawls of one set will be rendered operative during the stroke of the lever in either direction, and the other set rendered operative during the stroke in the opposite direction.

With these and other objects in view, as will more fully hereinafter appear, the invention consists in certain novel features of construction, and arrangement of parts, hereinafter fully described, illustrated in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that various changes in the form, proportions, size and minor details of the structure may be made without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings:—Figure 1 is a plan view of a pawl and ratchet mechanism constructed and arranged in accordance with the invention, showing the positions assumed by the parts at the completion of the lever movement in one direction. Fig. 2 is a similar view showing the positions assumed at the completion of the movement of the lever in the opposite direction.

Similar numerals of reference are employed to indicate corresponding parts throughout the several figures of the drawings.

The mechanism forming the subject of the present invention may be used in connection with various forms of machinery, and in the present instance its working parts are shown as mounted on a suitable frame 10 that is provided with bearings for the reception of a shaft 11 to which step by step rotative movement may be imparted from a rocking lever 12, the latter being shown in the present instance as provided with a pair of operating handles 13, although it will be understood that the lever may be connected to any suitable mechanism and operated by power.

The lever 12 is mounted on a pivot pin 14 that extends through a slot 15 formed in one of the members of the frame and the two arms 16 and 17 of the lever are provided at points equi-distant from the center pivot 14 with pivot pins 18 that extend entirely therethrough and form the pivotal connections for the outer ends of pairs of links 19 and 20.

Pivoted between the links 19 is a pawl 21 that is arranged to engage the teeth of a ratchet wheel 22 that is carried by the shaft 11 and pivoted between the links 20 is a second pawl 23 also arranged to engage the ratchet teeth, the construction being such that during the forward stroke of the arm 16, the pawl 21 will be operated, and during the forward stroke of the arm 17 the pawl 23 will be operated. These two pawls are held in proper position by a helical spring 25 that extends between said pawls and in part supported by a small rod or pin 26.

Mounted on the frame 10 are two rocking arms 28 and 29 which are connected by pivot pins 30, 31 to the rear ends of the links 19 and 20, respectively, so that as the main lever is operated, the rear ends of the links will travel in an arcuate path. On the pivot pins 30 and 31 are mounted pawls 34, 35, respectively, and these pawls are held against the ratchet wheel by small springs 36.

It will be observed that during the operative stroke of the arm 16 of the lever that the pawl 21 will travel in engagement with the ratchet wheel and at the same time the links 20 in moving to the right will force the pawl 35 against the tooth of the ratchet wheel so that both pawls 21 and 35 will be operative during the working stroke of the arm 16. When the arm 17 of the lever is on the operative stroke, the pawl 23 will be in engagement with the teeth of the ratchet wheel and the pawl 34 will, also, be operated, and will aid in transmitting movement to said wheel.

Owing to the multiplicity of the pawls in engagement with the wheel all danger of stopping is avoided and the ratchet wheel will be positively turned through a predetermined arc at each operation.

What is claimed is:—

1. In combination, a ratchet wheel, a carrying means therefor, a pair of sets of pawls

arranged to alternately engage and turn the wheel, an operating lever, and links extending from said operating lever, each link supporting one of the pawls of each set, two of said pawls operating on movement of the lever in one direction and the other two on movement of the lever in the opposite direction.

2. In combination, a ratchet wheel, a supporting means therefor, an operating lever, a pair of links connected to said operating lever, a pair of rocker arms carrying the outer ends of said links, main pawls carried by the links and arranged to engage the ratchet wheel, and auxiliary pawls disposed at the juncture of the links and rocker arms and also engaging said ratchet wheel.

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

WILLIAM his × mark S. OSWALD.

Witnesses:
J. E. OGERLY,
J. R. BEETLES.