T. J. HAMMONS.

MECHANICAL MOVEMENT.

APPLICATION FILED AUG. 21, 1908.

994,745. Patented June 13, 1911.

Fig. 1.

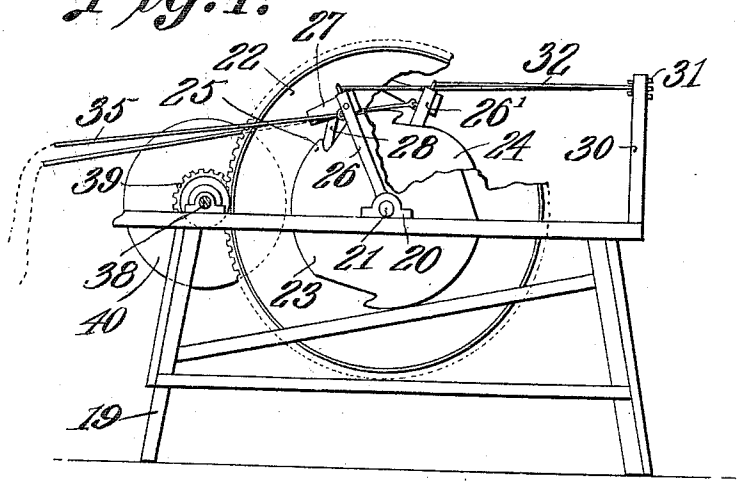


Fig. 2.

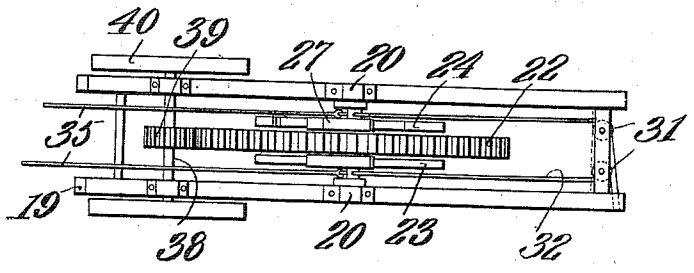
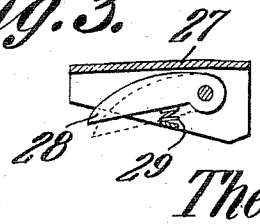


Fig. 3.



Witnesses

J. Towles

N. L. Collamer

Theodore J. Hammons,

Inventor

by Cachow & Co.

Attorneys

UNITED STATES PATENT OFFICE.

THEODORE J. HAMMONS, OF BRONSON, KANSAS.

MECHANICAL MOVEMENT.

994,745. Specification of Letters Patent. **Patented June 13, 1911.**

Application filed August 21, 1908. Serial No. 449,709.

To all whom it may concern:

Be it known that I, THEODORE J. HAMMONS, a citizen of the United States, residing at Bronson, in the county of Bourbon and State of Kansas, have invented a new and useful Mechanical Movement, of which the following is a specification.

This invention relates to machine elements, and more especially to pawls and ratchets; and its object is to produce a mechanical movement which is as nearly noiseless as possible.

To this end it consists in the use of a ratchet having undercut teeth and of a pawl whose tip is yieldingly supported and whose body is covered by a hood.

In the accompanying drawings, like characters of reference indicate like parts in the several views, and:—Figure 1 is a side elevation of my improved device partly broken away. Fig. 2 is a top plan view of the improved device referred to in Fig. 1. Fig. 3 is a detail view of one of the operating pawls and the casing or hood therefor.

In the drawings 19 designates a framework upon which is mounted a pair of bearings 20 supporting a shaft 21. Mounted on the shaft 21 and securely keyed thereto is a main gear 22 which may be either a toothed or friction gear as desired. Also secured to said shaft are ratchet wheels 23 and 24 provided with deep undercut teeth as indicated at 25. These wheels are so mounted on the shaft that the teeth of one of the wheels will lie intermediate the teeth of the other wheel, said teeth being thus alternated. Mounted for oscillation on the shaft 21 are a pair of arms 26 and 26′, each of which is provided at its outer end with a casing or hood 27 wherein is pivotally mounted a pawl 28 adapted to co-act with the teeth 25 of one of the ratchets 23 and 24. The casings or hoods 27 are provided with springs 29 located beneath and supporting the pawls 28 so gently that the end of the pawl may drop beneath the outer edge of the tooth 25 when in position to engage therewith. By reason of this spring support 29 the pawl is prevented from violently dropping into the lower end of the tooth and making a disagreeable clicking noise. When, however, the arm is carried forward the pawl is forced downward against the tension of the spring and into engagement with the ratchet by means of the undercut portion of the tooth, thus constituting a silent ratchet. Upon the rear end of the frame 19 is a standard 30 whereon is mounted a pair of sheaves 31. A tension member 32 is attached at each end to the arms 26 and 26′, and passes over the sheaves 31. By means of this construction when the arm 26 is moved forward the arm 26′ is moved backward by the action of the tension member 32, and when the arm 26′ is moved forward the arm 26 will, in like manner, be moved backward. This tension member 32 is preferably in the form of a wire, a chain, or the like.

Connected with the arms 26 and 26′ are tension members 35 which lead to a suitable source of reciprocating energy not necessary to illustrate herein, and it is intended that these members should be drawn upon alternately and to equal extent so that the arms will swing through corresponding arcs and the pawls carried thereby will be caused to alternately engage the ratchet wheels 23 and 24 and rotate the same. Reciprocating motion is thus converted into rotary motion and the main gear 22 may mesh with a smaller gear 39 on a shaft 38 journaled in the framework, which shaft may carry pulleys 40 from which the rotary motion can be delivered to any suitable machine.

What is claimed as new is:

In the mechanical movement, the combination with a shaft, two ratchet wheels fast thereon having alternately disposed teeth with deep undercut faces, arms loose on the shaft adjacent said wheels, and means for swinging the arms alternately; of a hood carried at the outer end of each arm, a pawl pivoted within the hood, and a spring fixed within the hood and supporting the

tip of the pawl with proper yielding force to permit it to drop over the outer edge of each tooth when its arm is retracted but with sufficient resiliency to permit the pawl to travel down the undercut face of the tooth when the arm is moved in the opposite direction.

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

THEODORE J. HAMMONS.

Witnesses:

WM. CAMPBELL,

FRED A. LEEK.