

W. L. KISSEL.
MECHANICAL MOVEMENT.
APPLICATION FILED APR. 13, 1910.

1,035,604.

Patented Aug. 13, 1912.

Fig. 1.

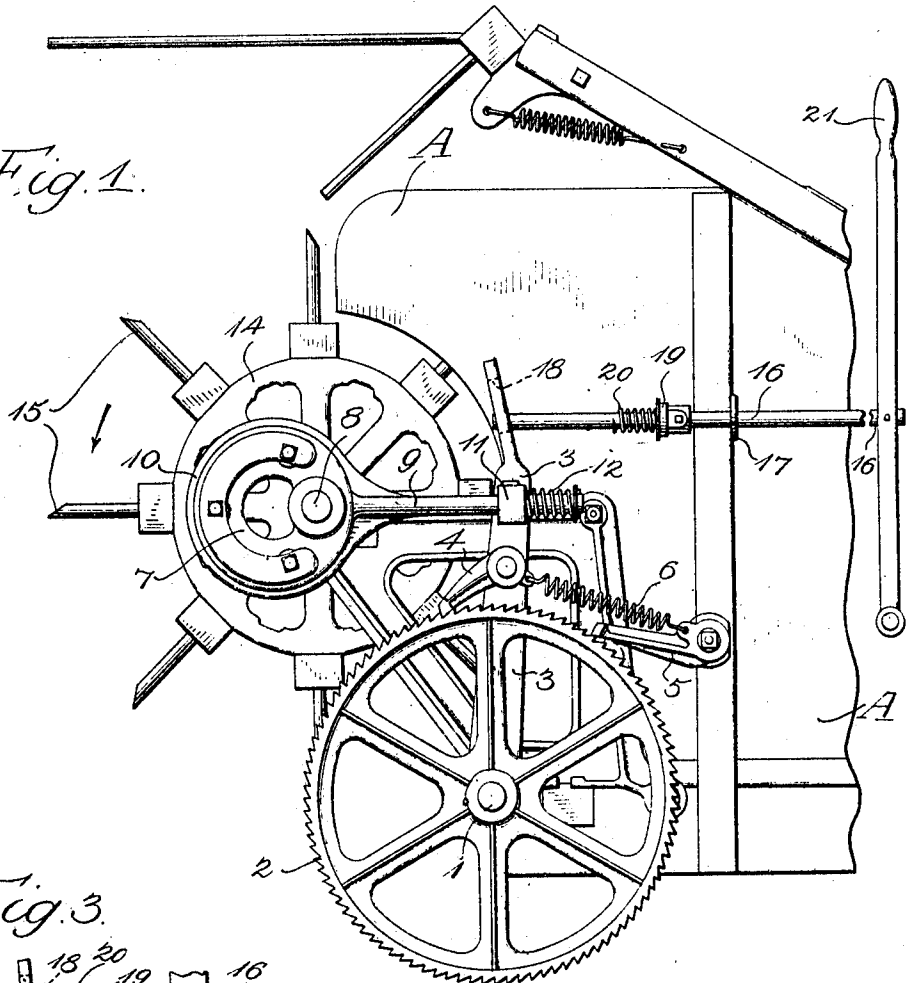


Fig. 3.

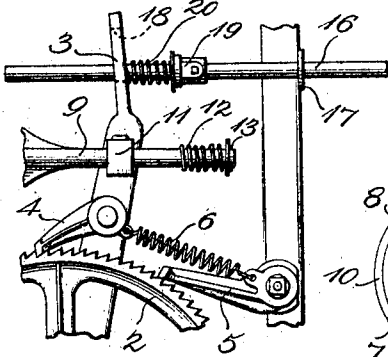
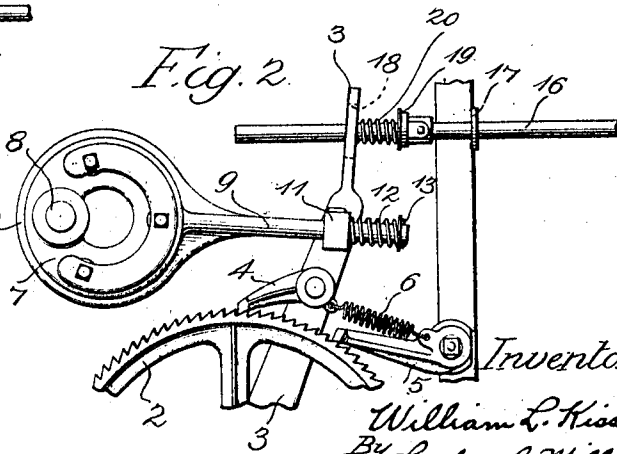


Fig. 2.



Witnesses:

J. C. Leirick.

C. Paul Parker

Inventor:

William L. Kissel
By Luther L. Miller
Attorney.

UNITED STATES PATENT OFFICE.

WILLIAM L. KISSEL, OF HARTFORD, WISCONSIN, ASSIGNOR TO SEARS, ROEBUCK & COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF NEW YORK.

MECHANICAL MOVEMENT.

1,035,604.

Specification of Letters Patent.

Patented Aug. 13, 1912.

Application filed April 13, 1910. Serial No. 555,185.

To all whom it may concern:

Be it known that I, WILLIAM L. KISSEL, a citizen of the United States, residing at Hartford, in the county of Washington and State of Wisconsin, have invented certain new and useful Improvements in Mechanical Movements, of which the following is a specification.

This invention relates to a mechanical movement which is especially adapted for use upon manure spreaders. The object of the invention is to provide an improved mechanism for driving the apron and controlling the rate of travel thereof.

In the accompanying drawings, Figure 1 is a fragmentary side elevation of the rear portion of a manure spreader equipped with an apron-driving mechanism embodying the features of my invention. Fig. 2 is a fragmental side elevation of said mechanism, detached from the spreader and showing the parts in different positions from those occupied in Fig. 1. Fig. 3 is a view similar to Fig. 2 showing the parts in still another position.

In the embodiment of my invention which I have herein illustrated, the apron (not shown) is suitably arranged to be driven by a shaft 1 rotatably mounted in the rear portion of the spreader box A. Upon one end of the shaft 1 is mounted a ratchet wheel 2. An arm 3 pivotally mounted upon the shaft 1 adjacent the ratchet wheel 2 carries a pawl 4 arranged to engage the teeth of the ratchet wheel so that pivotal movement of the arm 3 in one direction will rotate said ratchet wheel. A detent 5 mounted, in this instance, upon a suitable part of the box A is adapted to engage the teeth of the ratchet wheel 2 to prevent reverse movement of said ratchet wheel. 6 is a coiled spring having its ends connected to the pawl 4 and the detent 5 and serving to hold said pawl and said detent in engagement with the ratchet wheel 2. The spring 6 also tends to draw the arm 3 forwardly, the pawl 4 in this movement of said arm riding over the teeth of the ratchet wheel 2.

The means for swinging the arm 3 rearwardly thereby rotating the ratchet wheel 2 through the medium of the pawl 4, comprises an eccentric 7 mounted upon one end of the beater shaft. A rod 9, having at one end a strap 10 surrounding the eccentric 7, extends slidably through the eye 11 carried

by the arm 3. A coiled spring 12, surrounding the rod 9, is adapted to bear at one end against the eye 11 and at its other end against a pin 13 or other suitable stop fixed to the rod 9, said spring serving as a buffer for cushioning the engagement of the rod 9 with the arm 3 when said rod is reciprocated rearwardly by the eccentric 7.

The beater shaft 8, carrying the usual drum 14 and teeth 15, may be driven by any common or preferred means. I have deemed it unnecessary to illustrate any driving means for said beater shaft.

I have provided means for limiting the oscillatory movement of the arm 3 so that the pawl 4 carried by said arm will travel over a greater or lesser number of teeth of the ratchet wheel 2, and thereby move said ratchet wheel, and the apron driven thereby, through a greater or less space at each oscillation of said arm 3. Said means as herein shown comprises a rod 16 slidably mounted in an eye 17 on the spreader box, the rear end of said rod passing loosely through an elongated opening 18 in the upper end of the arm 3. A collar 19 is secured on the rod 16 rearwardly of the eye 17 and a coiled buffer spring 20 is positioned on said rod between said collar and the rear end of the rod. The rod 16 is arranged to be slid longitudinally by any suitable means, as, for example, a hand lever 21 pivotally mounted upon the spreader box near the driver's seat, said hand lever being connected to the forward end of the rod 16. It will be seen that when the rod 16 is moved rearwardly, as shown in Fig. 3, the forward movement of the arm 3, which is caused by the spring 6, will be yieldingly limited by the engagement of said arm with the coiled spring 20 upon the rod 16. When the forward movement of the arm 3 is thus limited, there will be a slight amount of lost motion between the buffer spring 12 upon the eccentric rod 9 and the eye 11 upon the arm 3. The rearward movement of said rod 9 will therefore be effective in oscillating the arm 3 through a distance less than its full arc of oscillation, and the apron will consequently be moved through a smaller distance at each revolution of the beater shaft 8.

It will be understood that a suitable lock—*e. g.*, the conventional and well known pawl and sector device commonly employed for

locking hand levers, may be provided for the hand lever 21, so that the rod 16 may be fixed in any desired position; according to the rate at which the operator desires the
5 apron to move.

I claim as my invention:

1. The combination of a shaft to be driven; a ratchet wheel fixed thereon; an arm pivoted on said shaft adjacent to said ratchet
10 wheel; a pawl carried by said arm and engaging said ratchet wheel; a detent pivotally mounted independently of said arm and engaging said ratchet wheel to prevent reverse movement thereof; a spring having its
15 ends attached to said pawl and said detent to hold them in engagement with said ratchet wheel, said spring also serving to swing said arm in the direction to draw said pawl over the teeth of said ratchet wheel; a driving
20 shaft; and a reciprocatory rod operatively associated with said driving shaft and arranged to be reciprocated thereby, said rod being directly connected with said arm but being slidable with relation thereto; said
25 rod being arranged to engage and swing said arm in the direction to rotate said ratchet wheel; and a stop device arranged to hold said arm in position to cause relative sliding movement between said rod and
30 said arm, whereby the extent of swinging movement of said arm may be regulated.

2. The combination of a shaft to be driven; a ratchet wheel fixed thereon; an arm pivoted on said shaft; a pawl carried by said
35 arm and engaging said ratchet wheel; a spring tending to swing said arm in one direction; a driving shaft; a reciprocatory rod operatively associated with said driv-

ing shaft and arranged to be reciprocated thereby, said arm having an eye thereon in
40 which said rod is slidably mounted; a stop device on the end of said rod; a coiled spring interposed between said stop device and said eye; said spring engaging said eye in the reciprocation of said rod for swing-
45 ing said arm in the direction to feed said ratchet wheel; and a stop device adapted to directly engage said arm and limit pivotal movement thereof in its non-feeding direction.
50

3. The combination of a shaft to be driven; a ratchet wheel fixed thereon; an arm pivoted on said shaft; a pawl carried by said arm and engaging said ratchet wheel; a detent pivoted at a stationary point independ-
55 ently of said arm; a spring having its ends attached to said pawl and said detent and holding them in engagement with said ratchet wheel, said spring also serving to swing said arm in the direction to draw
60 said pawl over the teeth of said ratchet wheel; a driving shaft; an eccentric thereon; a strap for said eccentric; a rod attached to said strap, said arm having an eye in which said rod is slidably mounted;
65 a stop on the end of said rod, a coiled spring interposed between said stop and said eye, reciprocation of said rod acting to swing said arm in a direction to rotate said ratchet wheel; and a stop device arranged to directly
70 engage said arm to limit pivotal movement thereof in the opposite direction.

WILLIAM L. KISSEL.

Witnesses:

PAUL A. RIX,

ALBERT K. MENZEL.