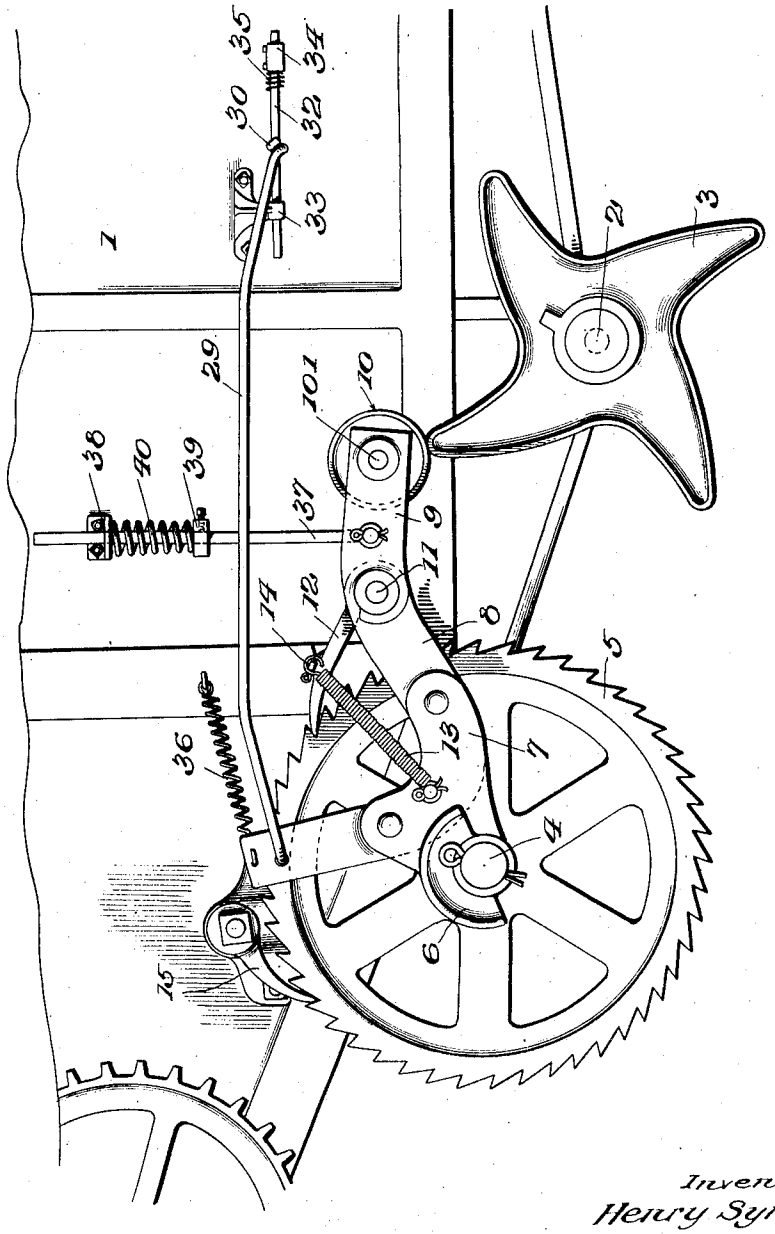
H. SYNCK.

FEEDING MECHANISM.

APPLICATION FILED AUG. 9, 1919.

1,369,494. Patented Feb. 22, 1921.



Inventor
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by Lacy & Lacy,
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UNITED STATES PATENT OFFICE.

HENRY SYNCK, OF COLDWATER, OHIO, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE NEW IDEA SPREADER COMPANY, OF COLDWATER, OHIO, A CORPORATION OF OHIO.

FEEDING MECHANISM.

1,369,494. Specification of Letters Patent. Patented Feb. 22, 1921.

Original application filed March 1, 1919, Serial No. 280,175. Divided and this application filed August 9, 1919. Serial No. 316,381.

To all whom it may concern:

Be it known that I, HENRY SYNCK, a citizen of the United States, residing at Coldwater, in the county of Mercer and State of Ohio, have invented certain new and useful Improvements in Feeding Mechanisms, of which the following is a specification.

This invention relates to feeding mechanism for fertilizer distributers of that type in which a rocker is actuated by a continuously rotating cam to intermittently move a ratchet wheel secured on the feeding shaft, the present application being a division of an application filed by me March 1, 1919, Serial No. 280,175. The objects of the present invention are to permit the use of a wider roller than heretofore to engage the driving cam, to avoid damaging impact of the driving cam against the rocker, and to maintain constant engagement between the driving cam and the rocker.

The accompanying drawing is a side elevation of my improved feeding mechanism.

In the drawings, the reference numeral 1 indicates a portion of the frame or bed of a fertilizer distributer, and 2 indicates the rear axle mounted thereon in the usual manner. A driving cam 3 is secured rigidly to the axle 2 and in the present instance is shown as constructed with four arms each having its forward face approximately radial to the axle and its rear face eccentric to the axle and convexly curved. Supported at the rear end of the bed 1 in the usual manner is a shaft 4 on which are secured sprocket wheels carrying the apron by which the fertilizer is conveyed to the distributing and spreading devices, these sprocket wheels and the conveyer not being illustrated, however, as they form no part of my present invention. A ratchet wheel 5 is secured upon the shaft 4 and is intermittently rotated so as to impart rotary movement to the shaft 4 and thereby actuate the conveyer so as to effect travel of the same toward the rear of the bed 1 and accomplish the desired delivery of the fertilizer. The means for rotating the ratchet wheel comprises a casting 6 which is mounted loosely upon the shaft 4 and is provided with an arcuate extension 7 to which the rocker or oscillatory lever 8 is rigidly secured, the said rocker or lever being illustrated as an angle lever having one arm projecting upwardly and disposed above the shaft 4 while the other arm projects forwardly from the said shaft. The forwardly projecting arm of the rocker is curved, as shown, so that it rises from the end of the extension 7 of the bracket 6 in the position shown in Fig. 1 and then is carried forward as at 9 having the form substantially of a shallow inverted V. At the extremity of the rocker is a stud 101 and a roller 10 is mounted thereon for free rotation and disposed in the vertical plane of the driving cam 3 so that it will be engaged by the arms of the said cam as the latter rotates. At the apex of the V-shaped portion of the rocker, I pivotally attach by a pin 11 the feeding pawl 12 which projects rearwardly and engages the teeth of the ratchet wheel 5 so that as the arm 8 of the rocker moves upwardly and rearwardly under the influence of the driving cam 3 the ratchet wheel will be rotated and a feeding impulse transmitted to the fertilizer conveyer. Of course, as the roller 10 clears the end of the arm of the cam 3 the feeding pawl will move reversely over the ratchet wheel and return to its initial position. To hold the pawl in engagement with the ratchet wheel, I provide a spring 13 which is secured at one end to a projection or finger 14 on the pawl and at its opposite end to the extension 7 of the bracket 6.

To prevent retrograde movement of the ratchet wheel, a holding dog or pawl 15 is provided and this holding dog or pawl is mounted upon the wagon bed immediately over the ratchet wheel, as shown.

It is desirable in feeding mechanism of this type that all unnecessary noise be eliminated and also that the roller 10 be in engagement with the driving cam for the full length of its stroke. To regulate the stroke of the rocker, I pivotally attach to the upper end of the same a sleeve member 29 which extends forwardly and has its extremity 30 slidably receiving the rear portion of a controlling rod 32 which is slidably mounted in a suitable guide 33 on the side of the wagon bed and extends forwardly to the front end thereof where it may be set by the driver through the medium of an ordinary hand lever in a well-known manner. An adjustable stop 34 is secured upon this rod 32 and it is obvious that by moving the said stop forwardly or rearwardly the

length of the stroke may be governed inasmuch as the eye or sleeve 30 will impinge against said stop in its forward movement. By moving the rod 32 rearwardly, the stop 34 may be set to hold the rocker out of the path of the cam and thereby arrest the operation of the feeding mechanism so that the machine may be moved from one field to another field without distributing. To prevent breakage of the parts, a cushion spring 35 is coiled around the rod 32 immediately adjacent the stop 34 so as to receive the impact of the member 30. I have shown a retractile spring 36 secured at its rear end to the upper extremity of the rocker and at its forward end to the side of the wagon bed and it will be readily understood that when the rocker is oscillated the spring 36 will be alternately extended and retracted so as to hold the roller 10 constantly in engagement with the working face of the cam 3. I have also shown a vertically disposed pin or rod 37 pivoted at its lower end to the forwardly projecting portion of the rocker between the feeding pawl and the roller 10 and having its upper portion slidably mounted in a bracket or guide 38 on the side of the wagon bed. An adjustable collar 39 is secured upon the rod 37 and a spring 40 is coiled around said rod between the guide 38 and the collar 39. When the forward free end of the rocker is raised under the influence of the cam, the spring 40 will be compressed and by its tendency to expand will hold the roller 10 constantly against the working face of the cam and as the roller clears the end or point of the arm of the cam will cause the roller to ride down the rear face of said arm. While I have shown these springs 36 and 40 as both connected to the rocker, it is to be understood that either spring may be omitted and the spring retained will effectually operate to hold the roller 10 against the driving cam so that it will ride on the rear convex face of the working arm of the cam and not drop forcibly with a distracting noise or jar against the advancing working face of an arm of the cam. By applying the holding force vertically downward upon the rocker, I obtain a direct action which effectually holds the end of the rocker to the cam. By providing separate pivot points for the roller and feeding pawl, I am enabled to use a wider roller than if the pawl and roller had a common pivot and by giving the forwardly extending arm of the rocker the inverted shallow V-shape shown and described, I obtain decided advantages in operation. Where the impulse-receiving arm of the rocker was straight as heretofore generally constructed, it frequently assumed a position while at work in which the tappet or cam arm would hit the under edge of the rocker in rear of the end thereof instead of engaging the roller or the end of the rocker so that distracting noise and excessive wear of the parts resulted, but I overcome this noise and wear by forming the intermediate portion of the rocker arm above a straight line connecting the ends of the arm.

My present invention is very simple in the construction and arrangement of its parts and possesses a high degree of efficiency for the purpose for which it is designed.

Having thus described the invention, what is claimed as new is:

In a feeding mechanism for the purpose set forth, the combination with a ratchet wheel, of a bell crank lever fulcrumed concentric with said ratchet wheel, a roller and a pawl carried by one arm of said lever, means tensioning said pawl for engagement with said ratchet wheel, a multiple arm driving cam engaging said roller to rock the bell crank lever and thereby move the ratchet wheel through the medium of said pawl, a bracket, a rod slidable in said bracket and connected to the above mentioned arm of said bell crank lever, an adjustable member carried by said rod, a spring confined between said bracket and adjustable member whereby the tension of said spring is continuously exerted on the above mentioned arm of the bell crank lever for uninterruptedly maintaining the roller in contact with said cam to reduce the operating noise, and a spring exerting a fixed tension on the remaining arm of said bell crank lever to supplement the action of the previously mentioned spring.

In testimony whereof I affix my signature.

HENRY SYNCK. [L. S.]