No. 735,446. PATENTED AUG. 4, 1903.

E. BASEMAN.

SPEED MECHANISM.

APPLICATION FILED JUNE 21, 1902.

NO MODEL.

Fig. 1.

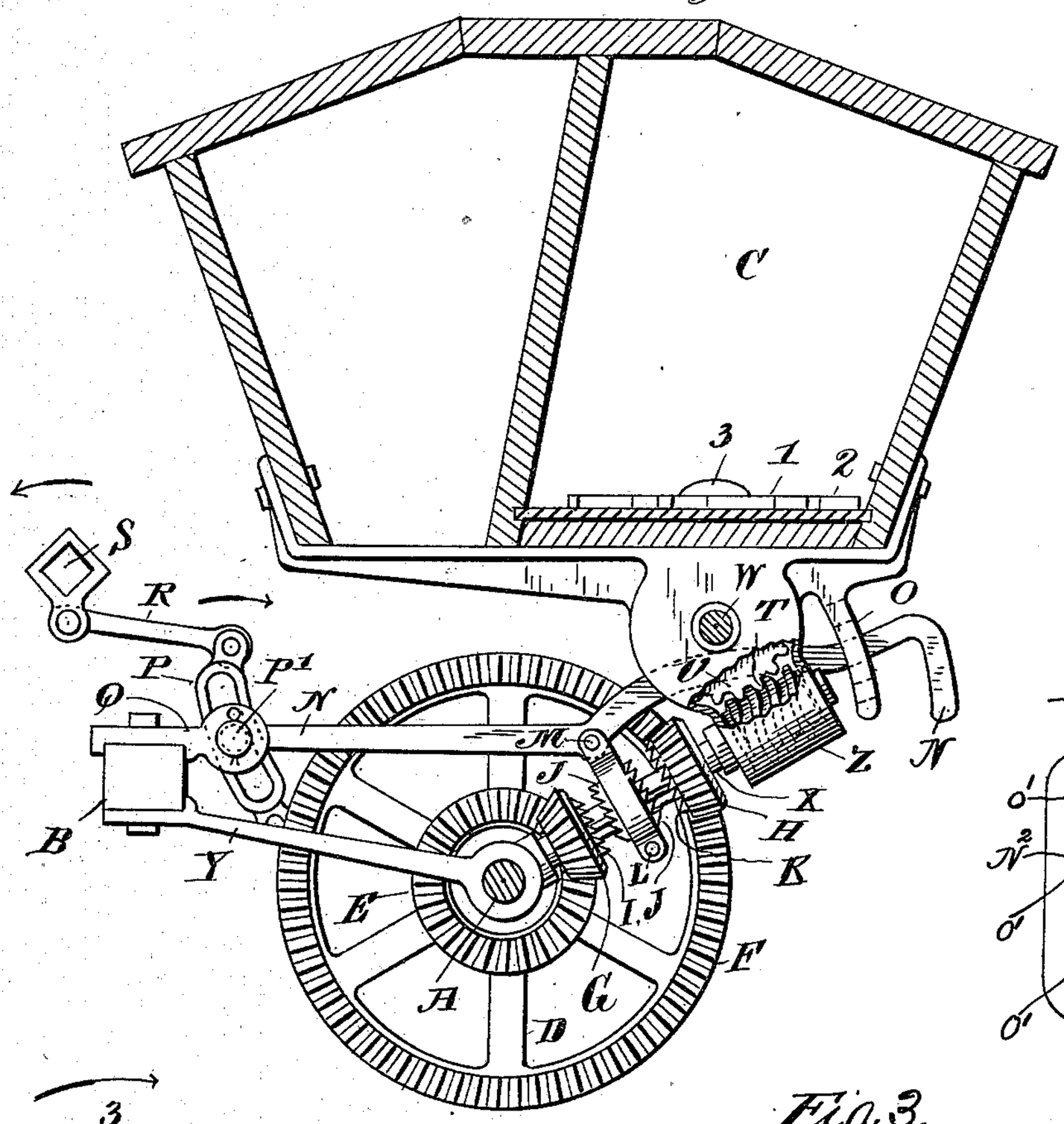


Fig. 4.

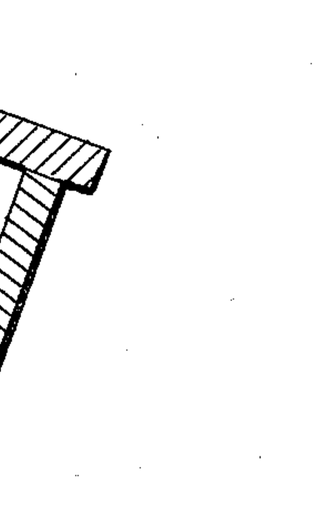
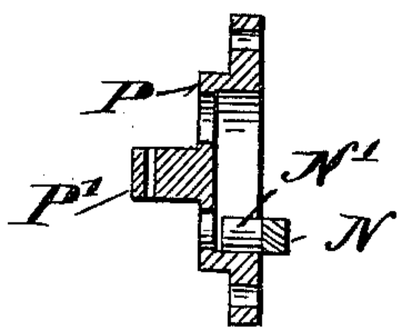


Fig. 3.



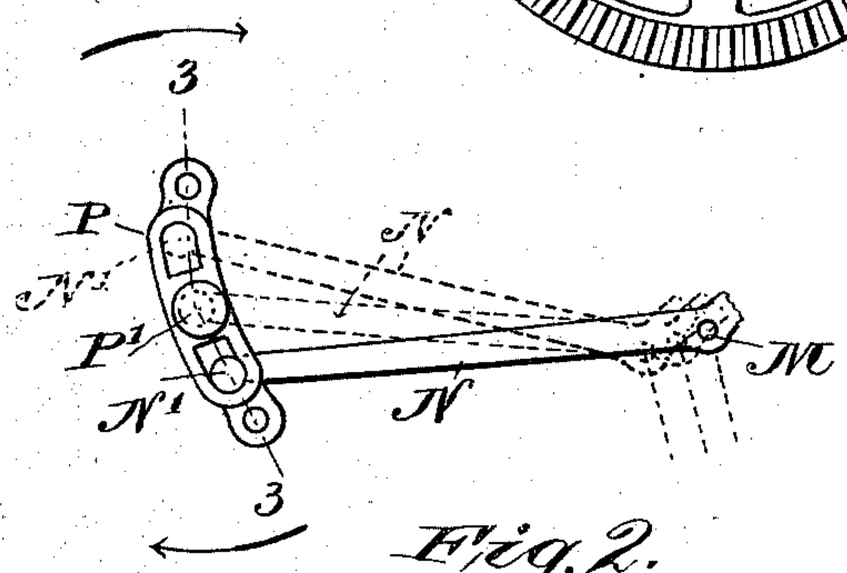


Fig. 2.

WITNESSES:

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No. 735,446. Patented August 4, 1903.

UNITED STATES PATENT OFFICE.

ERNEST BASEMAN, OF MACEDON, NEW YORK, ASSIGNOR TO BICKFORD AND HUFFMAN COMPANY, OF MACEDON, NEW YORK, A CORPORATION OF NEW YORK.

SPEED MECHANISM.

SPECIFICATION forming part of Letters Patent No. 735,446, dated August 4, 1903.

Application filed June 21, 1902. Serial No. 112,653. (No model.)

To all whom it may concern:

Be it known that I, ERNEST BASEMAN, a citizen of the United States, residing at Macedon, in the county of Wayne and State of New York, have invented certain new and useful Improvements in Speed Mechanisms, of which the following is a specification.

My invention relates to seeding-machines or grain-drills, and more particularly to that class thereof wherein means are employed for varying the amount of seed, grain, or fertilizer distributed.

My improved devices are shown herein as connected to the fertilizer-feed of the seeding-machine or grain-drill; but it will be obvious that parts thereof may be applied to the grain-feed and that the speed device is capable of being used with many forms of mechanism wherein a variable speed is desired.

The invention consists in the construction and combination of parts now to be described in the specification and as finally pointed out in the claims.

Referring to the drawings, wherein the same parts are designated by the same letters of reference throughout the several views, Figure 1 is a detached view of certain parts of a seeding-machine, partly in section, showing the mode of application thereto of my invention. Fig. 2 is a detail view of the shifting piece and its connection to the adjusting-lever. Fig. 3 is a sectional detail of the shifting piece, taken on the line 3 3 in Fig. 2; and Fig. 4 is a detail face view of the adjusting loop or bracket.

The box or hopper C may be of the ordinary or any suitable construction and may be provided with a plurality of fertilizer-distributers, only one of which is shown in the drawings. These fertilizer-distributers are of the general class shown and described in the United States Patent to S. H. Everett, No. 479,637, July 26, 1892. The fertilizer-wheel 1 is provided with a series of projecting points or teeth 2 and a spindle or boss 3 and is actuated by suitable connections from the fertilizer-shaft W in such manner that the wheel 1 is operated thereby and the fertilizer in contact therewith is conveyed to the further distributing devices. These parts, however, form no part of my present invention.

The speed mechanism which constitutes my invention is shown herein as connected to the fertilizer-shaft W, although it is obvious that it might be applied to the grain-delivery devices or to other mechanisms where changeable speed is desired. I am enabled by the use of this speed mechanism to vary the quantity of fertilizer distributed without relying solely upon the use of the movable gates, as described in the Everett patent. For this purpose I employ a double bevel-gear D, shown as located upon the driving shaft or axle A of the machine, which axle is mounted in the customary manner and is provided with hangers or brackets Y, extending therefrom to the bed-piece B. The double bevel-gear D is formed with an inner bevel-face E, from which a slow speed may be transmitted, and an outer bevel-face F, from which a fast speed may be transmitted. The driven shaft X is mounted in suitable bearings (not shown) in a direction radial to the double bevel-gear D and has mounted loosely thereon a bevel-gear G, meshing into the bevel-face E, and a bevel-gear H, meshing into the bevel-face F. The upper end of the shaft X has fast upon it a worm T, mounted in the worm-box Z, which worm T meshes into the worm-gear U, fast upon the fertilizer-shaft W, in such manner that rotary motion will be transmitted thereto when the shaft X is rotated. The bevel-gear G is provided on its upper face with a clutch member I, and the bevel-gear H is similarly provided on its lower face with the clutch member K. Mounted between the clutch members I and K and splined on the shaft X, so that it may move longitudinally thereon, is a double clutching member J, which may be caused to engage either with the clutch member I on the bevel-gear G or the clutch member K on the bevel-gear H and when so engaged to effect the rotation of the shaft X and of the fertilizer-shaft W through the connections described. A strap L is loosely connected to the double clutching member J, so that the clutching member J may rotate therein, and by it the clutching

member J may be moved into engagement either with the clutch member I or the clutch member K. The adjusting-lever N is pivotally attached to the strap L at M. The outer end of the lever N passes through the adjusting bracket or loop O, (see Fig. 4,) one of the inner faces of the loop O being formed with holding-notches O′ and the lever N being provided with a rib or projection N^2 to engage loosely the several notches O′. The lever N has attached to it at its other side a spring N^3, which bears against the opposite face of the loop O and normally holds the projection N^2 in engagement with one of the notches O′. The other end of the lever N is provided with a stud N′, which engages with an angularly-inclined slot in the shifting piece P, (see Fig. 3,) pivotally mounted by its trunnion P′ in the bracket Q upon the bed-piece B, this pivoted piece P being normally held in the position shown in Figs. 1 and 2. The pivoted piece P is so located and the slot therein so inclined that when the stud N′ is in the upper end of the slot the clutching member J will engage with the clutch member I and when in the lower end of the slot the clutching member J will engage with the clutch member K. When it is desired to engage the clutching member J with the clutch member K upon the high-speed bevel-gear H, the outer end of the lever N is disengaged from the central notch in the bracket O and forced upward until it engages the upper notch, and as the lever N is free to move about the point M on the strap L the stud N′ will be forced downward in the slot of piece P until it assumes the full-line position shown in Fig. 2, and because of the inclined shape and position of the slot it constitutes a fulcrum for the lever N, which will be forced outward longitudinally until the clutching member J is engaged with the clutch member K, thereby transmitting the higher rate of speed to the shaft X and fertilizer-shaft W. Similarly, if it be desired to transmit to the shafts X and W the slower rate of speed the lever N is caused to engage with the lower notch in the bracket O, thereby forcing the stud N′ to the upper end of the slot in the piece P, as shown in dotted lines in Fig. 2, and by the longitudinal movement of the lever N causing the engagement of the clutching member J with the clutch member I on the slow-speed bevel-gear G. As shown in Fig. 1, when the lever N engages the central notch in the bracket O the stud N′ will occupy the central position in the slot of the piece P, giving the strap L its central position and disengaging the clutching member J from both the clutch member I and the clutch member K. As already stated, the piece P is normally in the position shown in Figs. 1 and 2, but may be pivotally turned about the trunnion P′ by the link R, connected to the rock-shaft S, which is employed to lift the hoes, disks, or shoes of the seeding-machine from engagement with the soil. It will be seen that when the rock-shaft S is moved in the direction of the arrow the piece P will be turned about its trunnion P′. If at this time the clutch be entirely disengaged, and therefore the feeding mechanism is not being operated, the stud N′ on the lever N will be in the central portion of the slot in the piece P, and the pivotal movement of the piece P will therefore not affect the inoperative position of the clutching member J. If, however, the distributing mechanism is being operated, and therefore the clutching member J is in engagement with either the clutch member K on the fast-speed bevel-gear H or the clutch member I on the slow-speed bevel-gear G, the stud N′ on the lever N will be respectively either in the full-line or in the dotted-line positions shown in Fig. 2, and the pivotal movement of the piece P at such time will disengage the clutching member J and restore it to its central or inoperative position as the piece P turns about its center, and therefore acts in opposite directions at the opposite ends of the slot therein, thus disengaging the clutch member J whether in engagement with the clutch member K or with the clutch member I and stopping the operation of the distributing mechanism. This longitudinal movement of the lever N in the loop O is permitted, because of the loose connection between the notch O′ and the projection N^2, thus maintaining the angular adjustment of the lever N, notwithstanding the disengagement of the clutching member J connected thereto. When the rock-shaft S is turned in the opposite direction—as, for instance, when the hoes, &c., are replaced in operative position—the lever N will be moved longitudinally in the opposite direction, so as to restore the clutching member J to its former operative engagement.

It will be obvious that many changes and alterations may be made in the mechanism as set forth and that other applications thereof may be made without departing from the spirit of my invention.

Having thus described my invention, its construction and mode of operation, what I claim, and desire to secure by Letters Patent of the United States, is as follows:

1. In a speed mechanism, the combination of a plurality of members suitably actuated at different rates of speed, and a movable member adapted to engage any one of the actuated members, with a longitudinally-movable lever connected to the movable member and a fulcrum therefor, the whole arranged so that the lever may be operated to effect its longitudinal movement and to engage or disengage the movable member and one of the actuated members.

2. In a speed mechanism, the combination of a plurality of members suitably actuated at different rates of speed, and a movable member adapted to engage any one of the actuated members, with a lever pivotally con-

nected to the movable member and longitudinally movable, together with a fulcrum for the lever, the whole arranged so that when turned about its pivot the lever is shifted longitudinally to engage or disengage the movable member and one of the actuated members.

3. In a speed mechanism, the combination of a plurality of members suitably actuated at different rates of speed, and a movable member adapted to engage any one of the actuated members, with a longitudinally-movable lever connected to the movable member, and a fulcrum for the lever, the whole arranged in such manner that the operation of the lever effects its longitudinal movement and engages the movable member with one of the actuated members, together with means for moving the lever in the opposite direction and disengaging the movable member from the actuated member.

4. In a speed mechanism, the combination of a plurality of members suitably actuated at different rates of speed, and a movable member adapted to engage any one of the actuated members, with a lever pivotally connected to the movable member and longitudinally movable, and a fulcrum for the lever, the whole arranged so that when turned about its pivot the lever is shifted longitudinally to engage the movable member with one of the actuated members, together with means for moving the lever in the opposite direction and disengaging the movable member from the actuated member.

5. In a speed mechanism, the combination of a plurality of members suitably actuated at different rates of speed, and a movable member adapted to engage any one of the actuated members, with a lever pivotally connected to the movable member and a slotted piece engaging one end of the lever, so that when turned about its pivot the lever is shifted longitudinally to engage or disengage the movable member and one of the actuated members.

6. In a speed mechanism, the combination of a plurality of members suitably actuated at different rates of speed, and a movable member adapted to engage any one of the actuated members, with a lever pivotally connected to the movable member and a slotted piece engaging one end of the lever, so that when turned about its pivot the lever is shifted longitudinally to engage the movable member with one of the actuated members, and means to shift the position of the slotted piece so as to restore the movable member to its inoperative position.

7. In a speed mechanism, a suitably-actuated gear-wheel formed with two gear-faces, a shaft and two gears loose thereon and engaging constantly with the said gear-faces, and a clutch splined to the shaft, combined with a lever pivotally connected to the clutch and movable longitudinally, and a fulcrum for the lever, so that its operation about its pivot also shifts it longitudinally and connects the clutch with one or the other gear.

8. In a speed mechanism, a suitably-actuated gear-wheel formed with two gear-faces, a shaft and two gears loose thereon and engaging constantly with the said gear-faces, and a clutch splined to the shaft, combined with a lever pivotally connected to the clutch and a slotted piece engaging one end of the lever so that when turned about its pivot the lever is shifted longitudinally so as to engage or disengage the clutch and either gear.

9. In a speed mechanism, a suitably-actuated gear-wheel formed with two gear-faces, a shaft and two gears loose thereon and engaging constantly with the said gear-faces, and a clutch splined to the shaft, combined with a lever pivotally connected to the clutch and a slotted piece engaging one end of the lever so that when turned about its pivot the lever is shifted longitudinally so as to engage the clutch with either gear, and means to shift the position of the slotted piece so as to restore the clutch to its inoperative position.

10. In a speed mechanism, a suitably-actuated gear-wheel having a plurality of gear-faces, a shaft and a plurality of gears thereon meshing with the said gear-faces, a worm on said shaft, and a second shaft and a worm-gear thereon meshing with the worm, combined with means for connecting any one of the gears with the first-mentioned shaft, the said connecting means comprising a clutch splined to the shaft, a longitudinally-movable lever pivotally connected to the clutch, and a fulcrum for the lever, so that its operation about its pivot also effects its longitudinal movement and connects the clutch with the selected gear.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ERNEST BASEMAN.

Witnesses:
B. G. THOMAS,
D. C. TICHNOR.