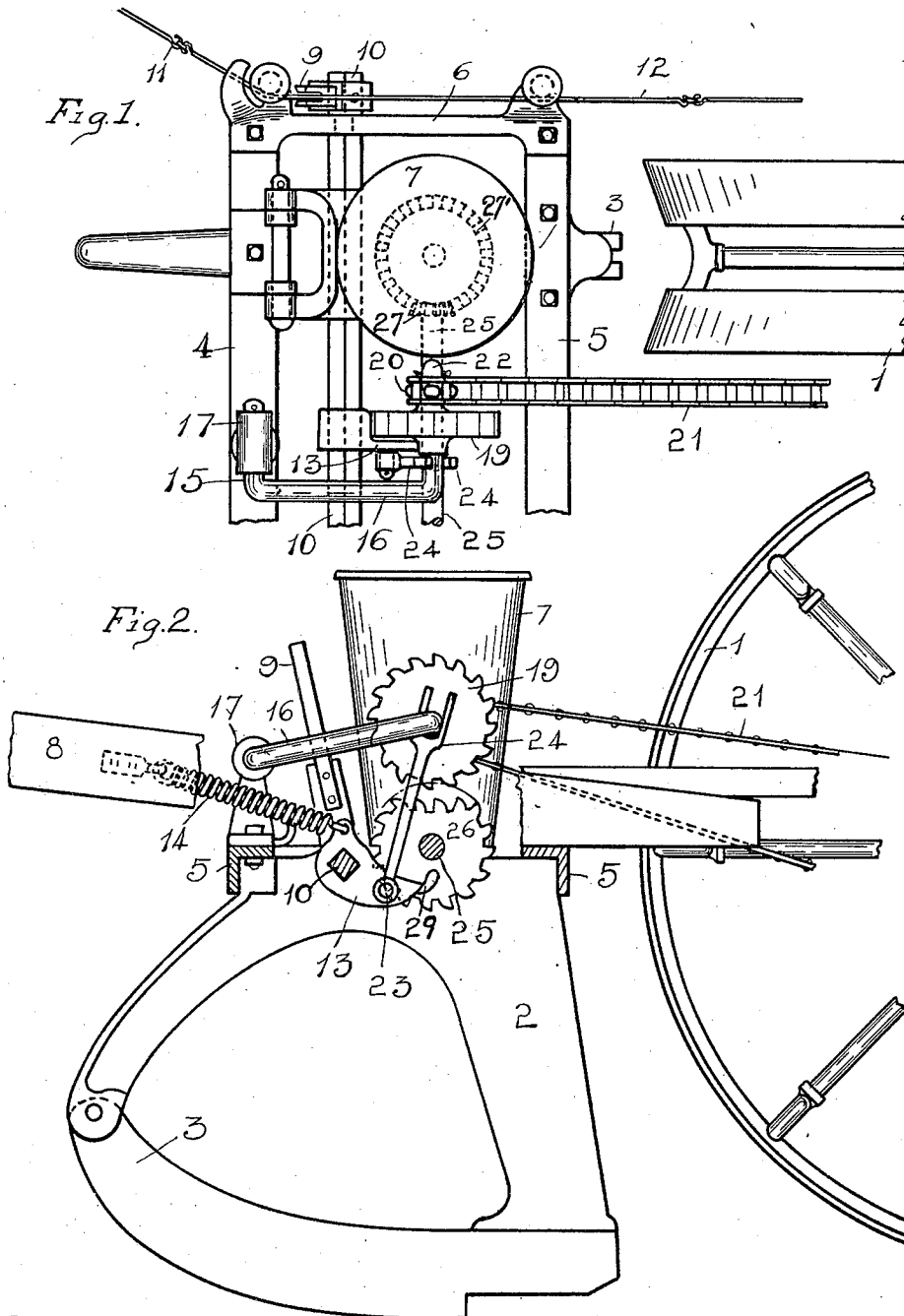


P. E. WISTRAND.
CHECK ROW AND DRILL CORN PLANTER.
APPLICATION FILED OCT. 31, 1910.

1,002,105.

Patented Aug. 29, 1911.



WITNESSES:
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UNITED STATES PATENT OFFICE.

PETER E. WISTRAND, OF GALVA, ILLINOIS, ASSIGNOR TO WISTRAND MANUFACTURING COMPANY, OF GALVA, ILLINOIS, A CORPORATION OF ILLINOIS.

CHECK-ROW AND DRILL CORN-PLANTER.

1,002,105.

Specification of Letters Patent. Patented Aug. 29, 1911.

Application filed October 31, 1910. Serial No. 590,012.

To all whom it may concern:

Be it known that I, PETER E. WISTRAND, a citizen of the United States, and a resident of Galva, in the county of Henry and State of Illinois, have invented certain new and useful Improvements in Check-Row and Drill Corn-Planters, of which the following is a specification.

My invention relates to corn-planters, the general object being to improve that class of machines with respect to means for securing regularity in planting, as will be fully disclosed.

It is an object of the invention to provide novel means for changing the machine from a check-row to a drill planter.

It is another object to provide new and efficient coöperating means for actuating the seeding mechanism in the seed-boxes. This object I attain by the employment of mechanism, one part of which is actuated by the rock shaft and the other of which derives motion from the supporting wheels of the planter, this mechanism being novel in both its structure and in its coöperation.

To dispense with a friction roller or a clutch, and by so dispensing with means which are not positive and certain in their action and operation, and substituting therefor positive-acting ones, provide a more useful and effective planter of greater capacity and more certain in the performance of its functions, constitutes a main object. In this connection it is an object to provide line-gear wheels, or wheels lying in substantially the same plane and each provided with peripheral cogs, as distinguished from bevel-gear wheels; and further to provide each gear-wheel with a constant series of cogs, but a portion of the cogs of one of them dropped or lowered, and preferably lying in a plane non-concentric with the axis of the wheel.

To dispense with practically all springs, pawls, latches, and other frail and easily disordered parts common to most planters of this type is another object.

Minor objects will be in part obvious and in part pointed out.

To the attainment of the foregoing and other ends the invention consists in the construction, certain novel combinations, and the adaptation of parts hereinafter described and claimed.

In the accompanying drawings all my im-

provements are embodied in the best way now known to me; obviously, however, some of the constructions may vary in form, disposition and assemblage from that shown, some may be used without others, and some may be employed with mechanism differing entirely from that illustrated. I therefore desire to be understood as claiming all such advantages as are enforced by or arise out of any similar devices or which may accrue from modifications or combinations thereof, or both.

In said drawings, Figure 1 is a plan view, showing the right-hand front portion of a corn-planter, and Fig. 2 is a side elevation of practically the same.

The same reference numeral indicates the same part in both figures.

Coming now to a description of the invention, 1 indicates a supporting wheel; 2, a leg or seed-tube; 3, a runner or furrow-opener; 4 and 5 respectively, front and rear transverse frame-bars; 6, a check-row head; 7, a seed-box; and 8, the tongue. These are parts of a well known type of corn-planter and require no detailed description. To those familiar with the art it is evident that most of these parts are duplicated, or else continue through to and on the near side of the machine. The seeding mechanism in the hopper or seed-box is shown only in part, as its precise construction is unessential, while that in the seed-tube is omitted, it having nothing to do with my improvements.

9 is a forked lever, fixed on the usual rock-shaft 10, and is actuated in the common manner, by successional contacts of the tappets or buttons on the check-row-line 12 as the planter traverses the field. Also fixed on the shaft 10 is a pawl 13, the heel of which is engaged with one end of a retractile spring 14 the other end of which may be secured at any suitable point, but preferably to the tongue, and effecting return of the rock-shaft and forked lever to their normal positions after each impulse of the latter by the check-row-line buttons.

One arm, 15, of a U-shaped link 16 is pivoted in an eye 17 rising from the forward frame-bar, its other arm, 22, being somewhat elongated to provide a shaft on which are rotatably mounted a gear wheel 19 and a sprocket pinion 20, the latter embraced by a chain 21 which at its rear flight embraces a

driving sprocket, (not shown) fixed on the usual rotatory shaft which is actuated by the supporting wheel. Pivoted on a stud 23 projecting from near the toe of the rock-shaft pawl is a connecting rod or pitman 24, the upper part of which is preferably bifurcated to form a fork, as shown, but which may be provided with a slot, in which fork or slot the arm 22 seats and is supported.

25 is a rotatable shaft running transversely of the planter frame, in or by which frame it is suitably supported, and carries (fixedly) a gear wheel 26, a portion of the teeth of which are shown as lower than those of the remainder of its perimeter and preferably not concentric thereto. In fact, I prefer that they be more nearly concentric to the teeth of the wheel 19 with which they mesh at predetermined times. Their demarcation from a circle is shown by the arciform line crossing the teeth of the wheel 19. The wheel 26 is provided on one of its faces with a lug or detent 29, preferably disposed diametrically opposite the low cogs.

At each end the shaft 25 has fixed thereto a bevel-pinion 27 which co-acts with the teeth of a horizontally disposed bevel-wheel 27' in driving the seeding mechanism in the seed box. As has been already stated, the nature of this mechanism is optional.

In the use of the machine as a check-rower, the supporting wheels will impart constant movement to the chain 21 and thereby to the pinion 20 which will impart its movement to the gear wheel 19, to which it is fixed. As the planter progresses, at each contact of a tappet with the lever the shaft 10 will be rocked in the usual manner to impart rearward movement to the wheel and thereby falling movement to the point of the pawl 13. (It is to be supposed that the wheels 19 and 26 have been running in mesh, the former imparting motion to the latter.) The parts having reached the relative position shown at Fig. 2, with the pawl in contact with, and having stopped the movement of the detent 29, the falling movement of the former, caused by the rock-shaft, will release it from said detent and permit the pitman to fall and thereby permit the arm 22 and wheel 19 to likewise fall and bring the teeth of the gear wheels 19 and 26 into engagement, with the teeth of the upper one engaging the low cogs of the other, whereupon the rolling contact will cause the upper wheel to be gradually raised until it has assumed its highest position, where it is sustained by the pitman. The rotary movement of the wheel 19 will impart contrary rotary motion to the wheel 26, which movement will be continued until a complete or practically complete rotation has been made and until after the pawl 13 has been returned by the spring to its normal position, which position is such that it

will be struck by the detent to thereby stop the further rotation of the lower wheel and thereby that of the seeding mechanism in the hopper. The detent being disposed opposite the low cogs, it will be evident that they will be uppermost and in such position that the movement of the wheel 19 will not be interrupted but, *per contra*, its movement will be continuous. For the purposes of this specification I shall term the lower wheel a "dropped-cog" wheel as distinguished from a variable-speed wheel.

Each rearward movement of the rock-shaft removes the pawl from the detent, permitting the gear wheels to engage, whereupon both will continue to rotate until the lever has been returned by the spring 14 to its normal position, ready for another actuation by a tappet. During such time the shaft 25 will impart rotary motion to the seeding mechanism in the hopper, but during the interval which elapses, or that period during which the wheel 19 is elevated, said wheel will run in the space above the low cogs and the wheel 26 will remain inactive, but will start to revolve coincident with the movement of the pawl away from the detent and the simultaneous falling of the pitman, the link-arm 22 and the wheel 26, which movement is, as above stated, occasioned instantly upon the backward movement of the tappet-lever and thereby the rock-shaft.

For drill planting it is only necessary to tie down the lever 9 and thereby entirely free it from engagement with the tappets on the check-row line. Thus secured, the point of the pawl will be held constantly freed from the detent and the pitman will not sustain the upper wheel but will permit both wheels to run in constant engagement to thereby cause the lower one to impart constant rotatory movement to the shaft 25 and thereby to the seeding mechanism in the hopper.

While I prefer that the wheel 26 be constructed practically as shown it will be evident that minor changes may be made in the details of its construction. For instance, a plurality of detents may be employed, or a plurality of pawls, and either of these might be disposed elsewhere than where shown. In fact, more than one portion of the cogs of the lower wheel might be lowered. These low cogs, however, disposed opposite the detent, have proven to be a superior construction, productive of most excellent results.

Having thus described my invention, I claim as new and desire to secure by Letters Patent the following, to-wit:—

1. In a planter, in combination with the seeding mechanism, a shaft for imparting motion thereto, a dropped-cog wheel on said shaft, said wheel provided with a detent, a second cog-wheel adapted for engagement with and to actuate the one above recited,

pivoted means on which it is mounted, a rock-shaft, a pawl actuated thereby and adapted for periodic engagement with said detent, and means for pivotally connecting
5 said pivoted means and pawl.

2. In a planter, in combination with the seeding-mechanism, a shaft for imparting motion thereto, a cog-wheel on said shaft, said wheel provided with a detent, a second
10 cog-wheel adapted for engagement with and to actuate the one first recited, pivoted means on which it is rotatably mounted, a rock-shaft, a pawl actuated thereby and adapted for periodic engagement with said detent,
15 and a connecting-rod pivoted on said pawl and supporting one end of said pivoted means.

3. In a planter, in combination with the seeding mechanism, a shaft for driving said
20 mechanism, a cog-wheel fixed on said shaft, there being a detent on said wheel, a second

cog-wheel adapted for engagement with and to actuate the one above recited, a pivoted link on one end of which said second recited cog-wheel is rotatably mounted, a sprocket
25 pinion rotatably mounted on said link and adapted to actuate said second recited cog-wheel, means driven from the planter supporting wheels for driving said pinion, a rock-shaft, a pawl actuated thereby and
30 adapted for periodic engagement with said detent, and a connecting rod pivoted on said pawl and adapted to support one end of said link.

In testimony that I claim the foregoing I
35 hereto affix my signature at Galva, Henry county, Illinois, this 27th day of October, 1910.

PETER E. WISTRAND.

Witnesses:

JOHN HEADLAND,
OSCAR M. PETERSON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."