No. 814,070. PATENTED MAR. 6, 1906.

N. R. NELSON.

COMBINED GRAIN SEEDER AND CULTIVATOR.

APPLICATION FILED JAN. 3, 1905.

Fig. 1.

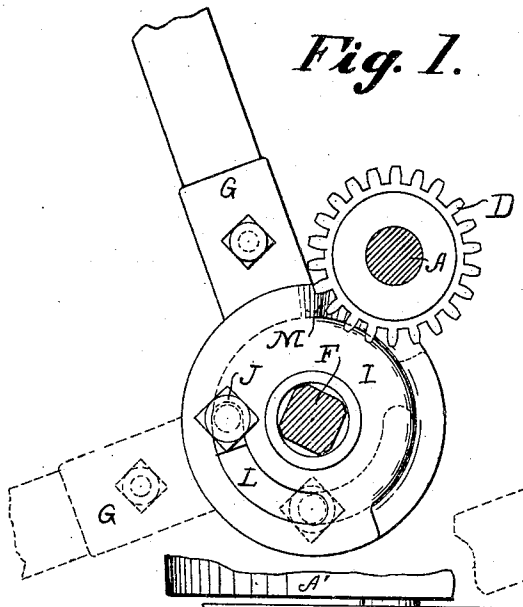


Fig. 3.

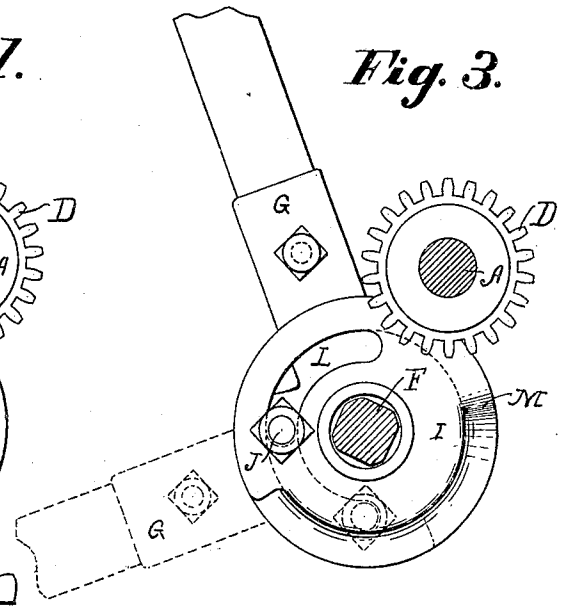


Fig. 2.

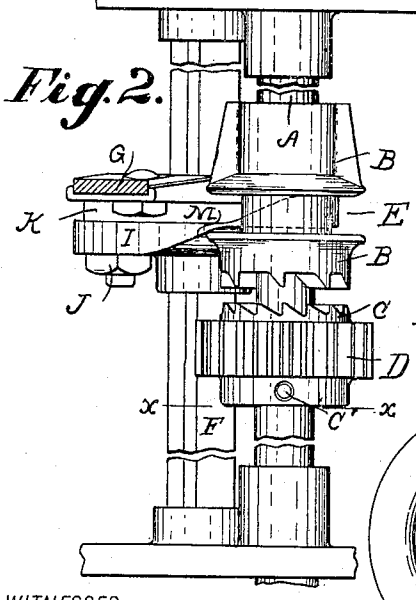


Fig. 4.

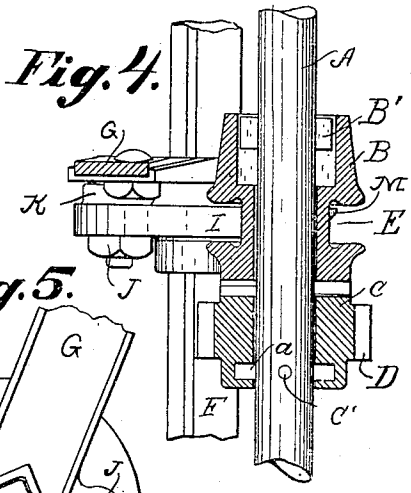
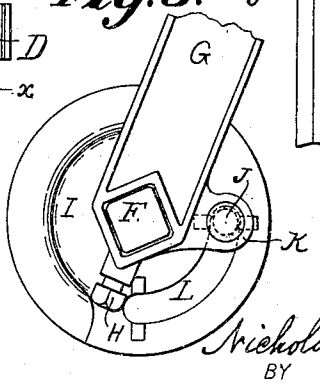


Fig. 5.



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COMBINED GRAIN-SEEDER AND CULTIVATOR.

No. 814,070. Specification of Letters Patent. Patented March 6, 1906.

Application filed January 3, 1905. Serial No. 239,318.

To all whom it may concern:

Be it known that I, NICHOLAS R. NELSON, a citizen of the United States, residing at Beaver Dam, county of Dodge, and State of Wisconsin, have invented new and useful Improvements in a Combined Grain-Seeder and Cultivator, of which the following is a specification.

My invention relates to improvements in combined grain-seeders and cultivators.

The object of my invention is to provide more perfect means for coupling the operative mechanism of the seeder with the traction-wheels of the cultivator, and the same is explained by reference to the accompanying drawings, in which—

Figure 1 represents a transverse section of my device drawn on line *x x* of Fig. 2. Fig. 2 is a top view of my coupling mechanism; and Fig. 3 is a similar view to Fig. 1, showing a different adjustment of the parts. Fig. 4 is a longitudinal section of a part of the coupling mechanism shown in Fig. 2; and Fig. 5 is a detail of the coupling mechanism, showing a portion of the operating-lever and cam.

Like parts are identified by the same reference-letters throughout the several views.

A represents the main driving shaft or axle of the machine, which is supported at its respective ends in the traction-wheels A′.

B represents a member of the clutch mechanism, which is slidably supported upon the axle A, with which it is connected by the ordinary key B′ and groove, so as to revolve with such axle. The clutch mechanism B is provided with an annular groove E for the reception of the operating-cam I, whereby as said cam is brought in contact with the sides of the annular groove E said clutch mechanism is given a longitudinal movement upon its supporting-axle and thrown into and out of mesh with the teeth of the member C of the clutch mechanism. The member C is also secured to the axle A in such a manner that while it cannot slide longitudinally thereon the axle is free to revolve within and independently of it.

D is a pinion which is formed integrally with the clutch member C. The member C is provided with an annular groove *a* for the reception of the radial pin C′, by which said clutch member is prevented from moving longitudinally on the shaft.

G is the operating-lever, by which the teeth of the cultivator (not shown) are raised and lowered, and the same is pivotally supported at its lower end from the transversely-arranged bar F, said bar F being supported at its respective ends from the side frame of the machine, as indicated in Fig. 2. The lever G is secured to the pivotal supporting-bar by the set-screw H. The cam I is centrally supported upon the bar F and turns upon it as the operating-lever G is turned in the act of raising and lowering the cultivator-teeth. The cam I is provided with a beveled bearing-surface M, formed at a tangent to the supporting-shaft of said cam, which beveled surface is adapted to bear against the vertical wall of said groove E, whereby as said cam is revolved toward the shaft A said coupling member B will be thrown into mesh with the coupling member C, and said parts are caused to revolve together, whereby motion is communicated from the traction-wheels through said driving shaft or axle, clutch mechanism, and pinion to the feed mechanism of the seeder. (Not shown.) The cam I is provided with a circular slot L for the reception of a bolt J, which bolt is connected with the operating-lever G through the lug K, which lug is formed integrally with said lever. Thus it will be understood than when said bolt is in place in said slot L said lever may be rigidly secured to said cam-plate I at any desired point of adjustment corresponding with the length of said circular slot L by turning down the nut on said bolt J, whereby said lug K and cam-plate I are rigidly locked together at the desired point of adjustment. Figs. 1 and 2 indicate the bolt located at the upper end of the slot L, and when thus located the two interlocking parts of the couplings B and C will be thrown out of engagement and separated. In Figs. 3 and 4 the bolt J is shown as located at the lower end of the slot L, so that when the operating-lever G is raised the teeth of the clutch mechanism B and C will be thrown into engagement, whereby motion will be communicated from the traction-wheels to the driving-gear of the seeder and the seeder will be operated, as required, in sowing grain. Thus it will be understood that by simply changing the location of the bolt J from one end of the slot L to the other the machine may be converted

from a cultivator into a seeder, when by reversing the position of said bolt J to the opposite end of said slot L the machine will be converted from a seeder into a cultivator. In other words, when the clutch mechanisms B and C are in engagement the gear mechanism of the seeder will be set in motion and the machine used for sowing grain. When, however, said clutch mechanism is thrown out of engagement, the seed-sowing mechanism of the machine will remain inoperative and the device used as a cultivator only.

It will of course be understood that the seeder and cultivator are both of the ordinary construction and form no part of my present invention, except as such parts are combined and adapted to coöperate therewith, my present invention pertaining more especially to the clutch mechanism described, by which the machine may be adapted to be used either as a cultivator or a seeder.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a grain-seeder and cultivator, the combination with the driving-shaft, of a clutch mechanism comprising two separable members provided with interlocking teeth, one of said members being keyed to and adapted to revolve with said shaft and to be moved longitudinally thereon, into and out of engagement with the other member, such other member being secured to and adapted to revolve with said shaft; an operating-lever pivotally supported at one end from the frame of the machine; means for communicating a longitudinal movement from said operating-lever to the slidable member of said clutch mechanism, comprising a cam I adapted to bear against the sides of the groove E whereby the coöperating parts of said clutch mechanism are thrown into and out of engagement with each other and means for communicating motion from the clutch mechanism to the driving mechanism of the seeder.

2. In a grain-seeder and cultivator, the combination with the driving-shaft, of a clutch mechanism comprising two separable members provided with interlocking teeth, one of said members being keyed to and adapted to revolve with said shaft and to be moved longitudinally thereon, into and out of engagement with the other member, said member being provided with an annular groove for the reception of an actuating-cam such other member being secured to and adapted to revolve with said shaft; an operating-lever pivotally supported at one end from the frame of the machine; a cam adjustably secured to said lever; and adapted to bear against the walls of the annular groove of said adjustable member-for communicating a longitudinal movement from said cam to the slidable member of said clutch mechanism and means for communicating motion from said clutch mechanism to the driving mechanism of the seeder, all substantially as, and for the purpose specified.

In testimony whereof I affix my signature in the presence of two witnesses.

NICHOLAS R. NELSON.

Witnesses:
CHARLES BEICHT,
C. J. KALKHURST.