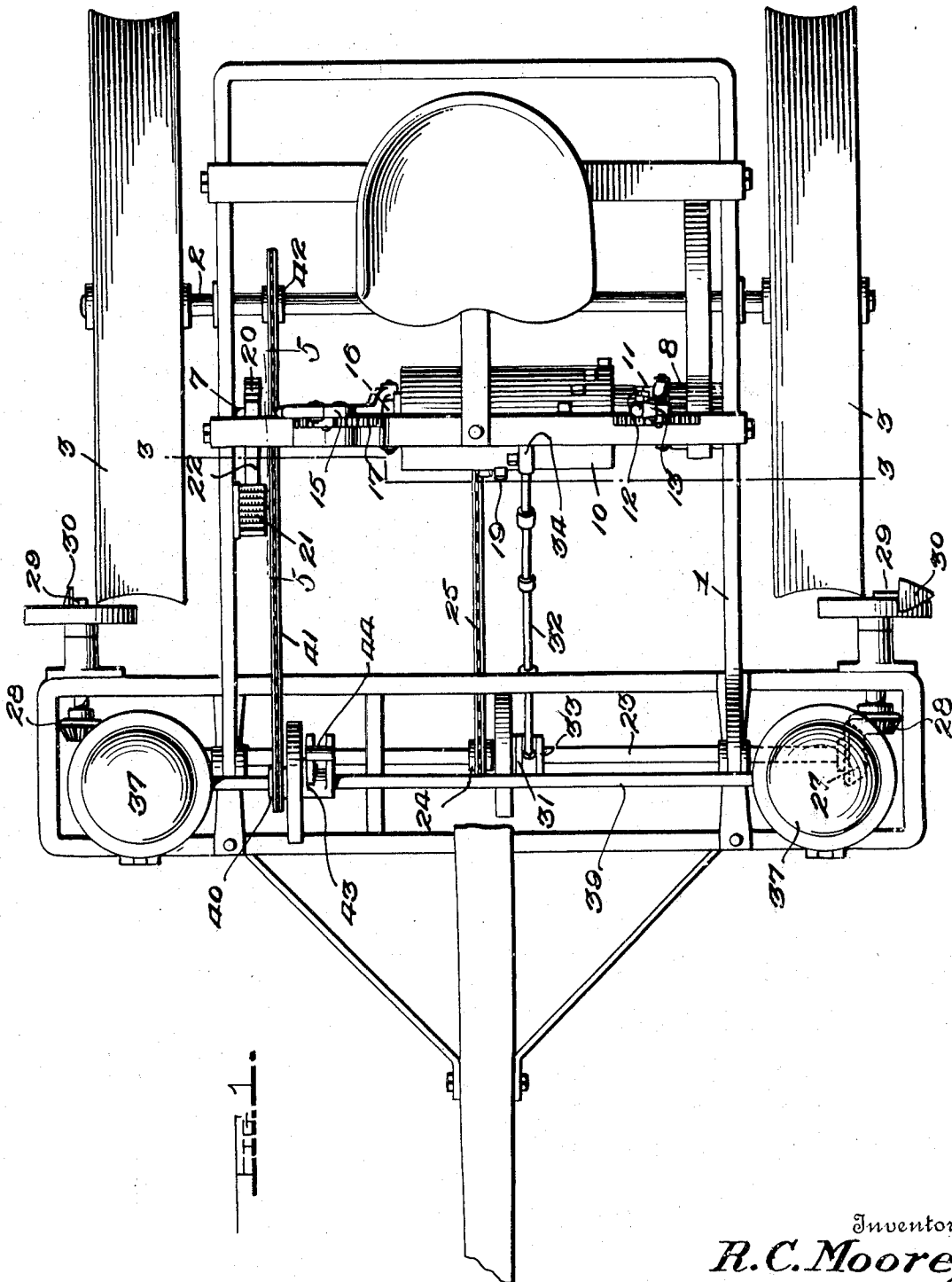


R. C. MOORE.
WIRELESS CORN PLANTER.
APPLICATION FILED AUG. 3, 1912.

1,062,787.

Patented May 27, 1913.

3 SHEETS—SHEET 1.



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Witnesses

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By

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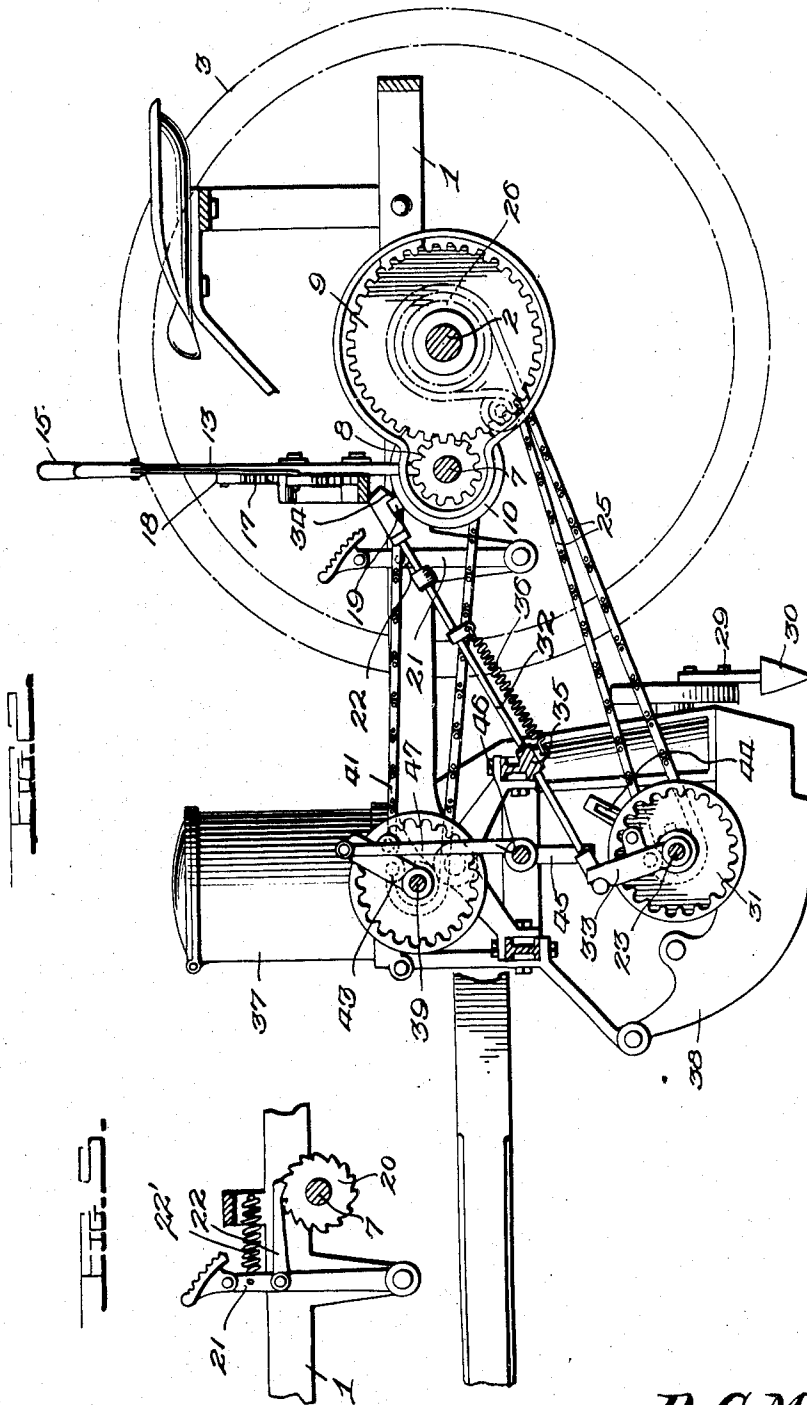
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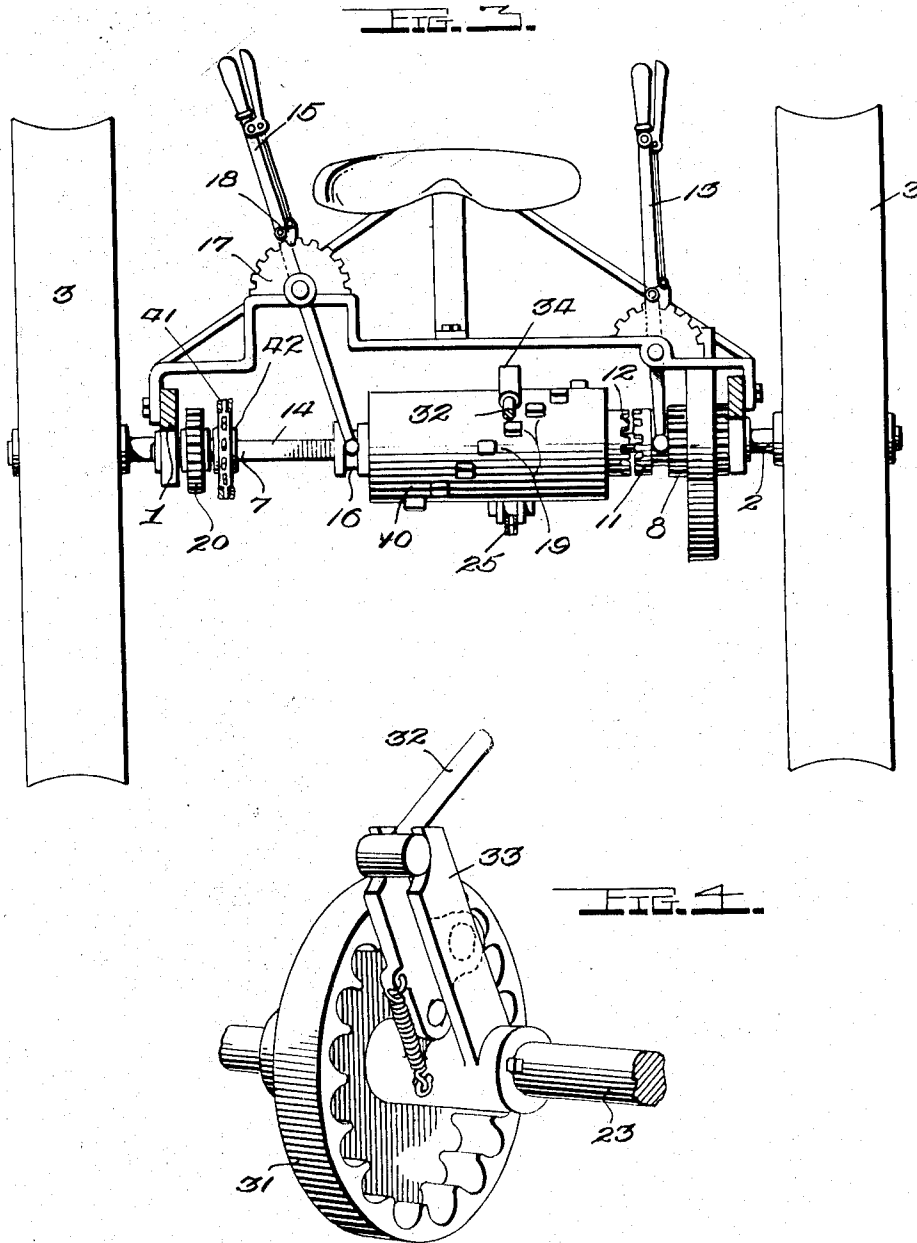
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UNITED STATES PATENT OFFICE.

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WIRELESS CORN-PLANTER.

1,062,787.

Specification of Letters Patent.

Patented May 27, 1913.

Application filed August 3, 1912. Serial No. 713,186.

To all whom it may concern:

Be it known that I, ROBERT C. MOORE, a citizen of the United States, residing at Spickard, in the county of Grundy and State of Missouri, have invented certain new and useful Improvements in Wireless Corn-Planters, of which the following is a specification, reference being had to the accompanying drawings.

My invention relates to new and useful improvements in the art of seeders and planters and more particularly to a wireless corn planter, and my object is to provide a device of this character with an improved means for dropping the seed therefrom.

A further object of the invention resides in providing a marking shaft adapted for rotation through the rotation of the rear axle of the machine, and a further object resides in providing a timing mechanism adapted for coöperation with said marking shaft.

Still another object of the invention resides in providing a drop shaft adapted for rotation at certain intervals through the rotation of said rear axle, and a still further object resides in providing means coöperating with said marker shaft and the drop shaft to cause the latter to be thrown into its operative and inoperative positions.

A still further object resides in providing a device which is simple and durable in construction and positive in operation.

With these and other objects in view, the invention consists in the novel features of construction, combination and arrangement of parts as will be hereinafter referred to and more particularly pointed out in the specification and claims.

In the accompanying drawings forming a part of this application, Figure 1 is a top plan view of the machine. Fig. 2 is a longitudinal section through the same. Fig. 3 is a vertical section through the device as seen on line 3—3, Fig. 1. Fig. 4 is a perspective view of the clutch mechanism operating the timing bar; and Fig. 5 is a section as seen on line 5—5, Fig. 1, showing the operating means for the cylinder.

In describing my invention, I shall refer to the drawings in which similar reference characters designate corresponding parts throughout the several views and in which—

1 indicates a frame of the usual or any preferred type used in planters of this char-

acter mounted on the axle 2 which carries the supporting wheels 3 at the ends thereof.

Rotatably mounted in bearings on the frame 1 and immediately forward of the axle 2, is a shaft 7, said shaft having slidably and loosely mounted thereon, a larger gear 8 which meshes with a gear 9 carried on the axle 2, and also slidably mounted on the shaft 7 and designed to rotate therewith, is a cylinder 10. As stated, the gear 8 is loosely mounted on the shaft 7 and the one face of said gear is provided with a clutch face 11, while the shaft 7 has mounted thereon, the opposed clutch face 12, and when it is desired to cause said shaft 7 to rotate with the rotation of the axle 2, the gear 8 is moved laterally on the shaft 7 by means of the lever 13 until said clutch face engages the clutch 12. The cylinder 10 has also been stated as being slidably arranged on the shaft 7 and designed to rotate therewith, and to this extent, that portion of the shaft 7 over which the cylinder is mounted is designed triangular in shape, as shown at 14 and the bore of the cylinder designed coincident therewith. Thus, when said shaft is rotated, the cylinder will likewise be rotated, and in order to provide for the lateral sliding movement of said cylinder on the shaft, a lever 15 is provided and fulcrumed on the frame 1, the lower end of said lever being engaged with a collar or the like 16 formed on one end of the cylinder 10. In order to retain this cylinder in any desired position, the rack 17 is provided and a spring detent 18 provided on the lever 15, adapted to engage the teeth of said rack, and a similar rack and detent is also provided in connection with the lever 13, whereby the latter lever may also be retained in any adjusted position.

The cylinder 10 is provided on its outer periphery with a plurality of lugs 19 which are arranged in stepped relation to one another or spirally throughout the length of said cylinder, the purpose of which will be hereinafter and more particularly described, and means has also been provided for the partial rotation of the shaft 7 and the cylinder 10 when the clutch faces 11 and 12 are out of engagement with one another. To this extent, I provide a ratchet gear 20 on the shaft 7 and a foot lever 21 fulcrumed on the frame 1, said lever being provided with a pawl or detent 22 adapted to engage

the teeth of said ratchet gear 20. A coil spring 22' has one end thereof connected with the upper end of the foot lever 21 and the opposite end of the same is connected to the frame 1 which, it will be seen normally retains said lever in its effective operating position. When it is desired to cause the shaft 7 to be rotated, the operator places his foot upon the lever 21 and forces downwardly upon the same. The lever will be returned by the action of the spring 22' which will cause the detent or pawl 22 to engage the teeth of the ratchet 20 which will obviously cause said ratchet and correspondingly the shaft 7 to be rotated.

Rotatably mounted in the forward portion of the frame 1, is an operating shaft 23 sometimes called a marking shaft in view of its function, said shaft having loosely mounted thereon, a gear 24 over which extends a chain 25, said chain also extending over a gear 26 secured on the axle 2. The one end of the marker shaft 23 has mounted thereon, a bevel gear 27 which meshes with a similar gear 28 carried on the side of the frame 1, said latter gear being provided with an arm 29, and carried on the end of said arm, is a shovel or any other desired form of marker 30, which is adapted to engage the ground as the shaft 23 is rotated to indicate where a hill of seed has been deposited. The gear 24, however, being loosely mounted on the shaft 23, will not permit said shaft to be normally rotated upon the rotation of the axle 2, but a clutch mechanism 31 carried on the shaft 23 in connection with the gear 24 will, when thrown to its effective position, allow the shaft to be properly rotated with the rotation of said gear 24. This clutch mechanism 31 is controlled, however, by a timing bar 32, one end of which is engaged between a pair of tongs 33 in connection with the clutch, and the opposite end of which is provided with a lug 34 adapted to be engaged by the lugs 19 on the cylinder 10. This timing bar has the end thereof with the lug thereon, normally resting on the cylinder 10, and the opposite end thereof when engaged by the tongs of the clutch, disposes said clutch in its ineffective position to permit the gear 24 to rotate without rotating the shaft 23. As the cylinder 10 rotates, one of the lugs 19 is adapted to engage the lug 34 on the timing bar 32 to draw the same rearwardly and out of the grasp of said tongs 33, said timing bar being guided in its movement by means of the guides or keepers 35 on the frame, and when the cylinder 10 releases the timing bar from engagement therewith, said timing bar is returned to its normal position by means of a spring 36, one end of which is engaged with the bar, while the opposite end thereof is engaged with one of the guides or keepers

35. The disengagement of the timing bar 32 from the grasp of the clutch, will permit the shaft 23 to make one revolution and when the spring 36 returns the timing bar to its normal position, said bar will again be engaged by tongs 33 of said clutch so as to dispose said clutch in its ineffective position.

A pair of seed boxes 37 is provided on opposite sides of the frame 1, from which depend the usual or any desired form of shoes or furrow openers 38 with conducting tubes for conveying the seed to the ground, and rotatably mounted transversely of the frame and in connection with the seed boxes, is an operating or drop shaft 39. Shaft 39 has loosely mounted thereon, a sprocket 40, over which extends a chain 41, said chain also passing over a sprocket 42 carried on the axle 2 and this shaft is connected by any desired means (not shown) to the dropping mechanism in the seed boxes, whereby when said shaft is rotated, the seed will be dropped from the boxes through the shoes and conductors to the ground below. In view of the fact, however, that the sprocket 40 is loosely mounted on the shaft, said shaft is not adapted to be rotated directly with the rotation of the axle 2, but I have provided in connection with said sprocket 40, a clutch mechanism 43 which is normally in its ineffective position, but which may be thrown to its effective position through a particular means which will be hereinafter and more particularly described.

The shaft 23 has removably or otherwise mounted thereon, an arm 44 which, when said shaft is rotated, is adapted to engage a lug or smaller arm 45 similarly mounted on a trip bar 46, said latter bar being rotatably disposed on the frame 1 above the shaft 23. The engagement of the arm 44 with the lug or arm 45 will cause said trip bar 46 to be partially rotated, whereupon an arm or the like 47 also carried on the shaft 46, will cause the clutch mechanism 43 to be thrown to its effective position to allow the shaft 39 to be rotated with the gear 40 thereon. The rotation of this shaft 39 will, as stated above, cause seed to be dropped from the boxes 37, which dropping will be simultaneous with the operation of the marking shaft 23, and when said shaft 39 has made one rotation, the clutch will be again thrown into its ineffective position.

In operation, it will be seen that when all of the gearing and clutches have been thrown out of their effective positions, the device may be propelled without affecting any of the operating parts, whatsoever, and when it is desired to place the machine in operation, the lever 13 is swung to allow the clutch faces 11 and 12 to contact, whereupon the shaft 7 will be caused to rotate with the rotation of the axle 2. The rota-

tion of the shaft 7, will permit the cylinder to be rotated, and when one of the lugs 19 thereon contacts with the lug 34 on the free end of the timing bar 32, the same will draw upon said timing bar to cause the same to be released from its engagement with the tongs 33 on the clutch mechanism 31 and correspondingly throw said clutch 31 into its effective position. The clutch 31 in its effective position will permit of the marker shaft 23 being rotated with the rotation of the axle 2 to mark the ground through the medium of the shovels 30, and as said shaft is rotated, the arm 44 thereon will contact with the other arm 45 on the trip bar 46 to cause said latter bar to be partially rotated, whereupon the clutch 43 will be thrown to its effective position to permit of the operating shaft 39 being rotated. This operating shaft 39 will make one rotation to operate the dropping mechanism in the seed boxes 37, and after this one rotation, the clutch mechanism 43 will be thrown to its ineffective position, and the clutch 31 will also be thrown in its ineffective position, due to the return of the timing bar 32 to its normal position in engagement with said latter clutch. The cylinder 10 being slidably arranged on the shaft 7, will permit of any one of the lugs 19 being engaged with the lug 34 of said timing bar, and as said lugs 19 are disposed in stepped arrangement, the movement of said cylinder to allow another lug thereon to be engaged with the lug 34, will increase or decrease the space between any two hills, as desired. Whenever it is desired to stop the operation of the dropping and marking mechanism, and at the same time permit the machine to be propelled, the lever 13 is swung on its fulcrum to disengage the clutch faces 11 and 12, and while the gear 8 is in its normal engagement with the gear 9, it will be seen that the rotation of said gear 8 will not affect the shaft 7 and the parts carried thereon, in view of the fact that said latter gear is loosely mounted on said shaft.

From the foregoing, it will be seen that I have provided an improved wireless corn planter, wherein means has been provided for the timing of the dropping of the seed and wherein a marking attachment is provided the operation of which is entirely contingent upon the timing mechanism. It will still further be seen that in connection with the timing mechanism, I have provided means whereby the distance between any two hills may be readily increased or decreased. Furthermore, it will be seen that the device complete is one of comparatively simple and durable construction, and one which is positive and efficient in operation.

While I have particularly described the features of the preferred form of my invention, it will be readily understood that vari-

ous changes in form, proportion and in the minor details of construction may be resorted to without departing from the spirit or sacrificing any of the principles of the invention.

Having thus described this invention, what I claim is:—

1. In a device of the class described, the combination with a frame having an axle rotatably mounted thereon, wheels carried on said axle, and seed hoppers mounted on the frame; of an operating shaft for said hoppers, mounted on said frame, and a marker shaft also mounted on the frame, means to cause the former shaft to be operated upon the rotation of the axle, said latter means being capable of various adjustments, and additional means operated upon the rotation of the last mentioned shaft to cause the other shaft to be rotated.

2. In a device of the class described, the combination with a frame, an axle rotatably mounted thereon, wheels carried on said axle, and seed hoppers mounted on the frame; of an operating shaft for said hoppers mounted on the frame, a marker shaft rotatably mounted on said frame, independent loose connecting means between said axle and shafts, a timing mechanism cooperating with said marker shaft and axle, the operation of which will permit the marker shaft to be rotated with the axle, and means in connection with said marker and operating shafts to cause the latter to be rotated upon the rotation of the former.

3. In a device of the class described, the combination with a frame, an axle rotatably mounted thereon, wheels carried on said axle, and seed hoppers mounted on the frame; of a pair of operating shafts rotatably mounted on said frame, independent loose connecting means between said axle and shafts, means to cause one of said shafts to be rotated upon the rotation of the axle, and additional means in connection with the last referred to means to cause the other of said shafts to be rotated upon the rotation of the axle.

4. In a device of the class described, the combination with a frame, an axle rotatably mounted thereon, wheels carried on said axle, and grain hoppers mounted on the frame; of a pair of operating shafts rotatably mounted on said frame, independent loose connecting means between said axle and shafts, clutch mechanisms on each of said shafts in connection with the aforesaid means thereon, means in connection with the clutch of one of said shafts and indirectly connected with said axle to cause said last mentioned shaft to be rotated with the latter, and means in connection with the last mentioned shaft and the clutch on said other shaft to rotate the latter upon the rotation of the former.

5. In a device of the class described, the combination with a frame, a rotatable axle thereon, wheels carried on said axle and seed hoppers on said frame; of an operating shaft 5 for said seed hoppers mounted on the frame, a marker shaft also rotatably mounted on said frame, independent loose connecting means between said axle and said shafts, clutch mechanisms on each of the shafts in 10 connection with the last referred to means thereon, a rotatable cylinder carried on the frame provided with a plurality of spaced lugs thereon, means to rotate said cylinder, 15 the lugs on said cylinder and the clutch on said marker shaft to cause the latter to be rotated at predetermined times, and means coöperating with the marker shaft and the clutch on said operating shaft to cause said 20 latter shaft to be rotated upon the rotation of the former.

6. In a device of the class described, the combination with a frame, an axle rotatably mounted thereon, wheels carried on said 25 axle, and seed hoppers mounted on the frame; of an operating shaft for said hoppers rotatably mounted on the frame, a

marker shaft also rotatably mounted on said frame, independent loose connecting means between said shafts and axle, clutch 30 mechanisms carried on said shafts in connection with said last referred to means, an additional shaft mounted on said frame and rotatable upon the rotation of said axle, a 35 cylinder slidably mounted on said additional shaft, said cylinder being provided with a plurality of spaced lugs on the periphery thereof, means to cause said cylinder to be rotated with the shaft carrying the same, a spring held longitudinal bar co- 40 operating with the lugs on said cylinder and clutch on said marker shaft to cause the latter to be rotated upon the rotation of said cylinder, and means in connection with said 45 marker shaft and the clutch on said operating shaft to cause the latter shaft to be rotated upon the rotation of the former.

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

ROBT. C. MOORE.

Witnesses:

H. C. FRANKLIN,
E. O. CAMPBELL.