No. 665,047. Patented Jan. 1, 1901.

A. ARMITAGE.

GRAIN DRILL.

(Application filed Feb. 13, 1900.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

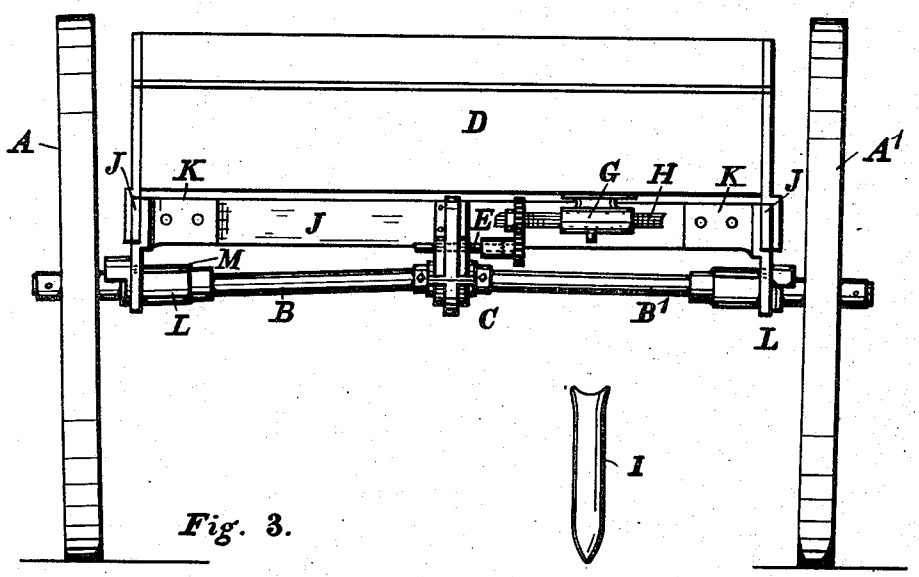


Fig. 3.

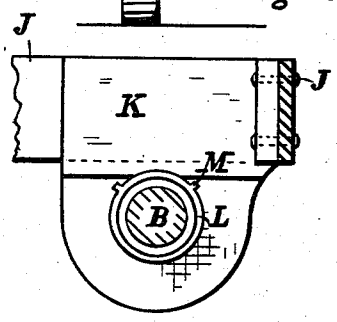


Fig. 4.

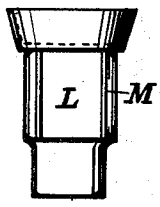
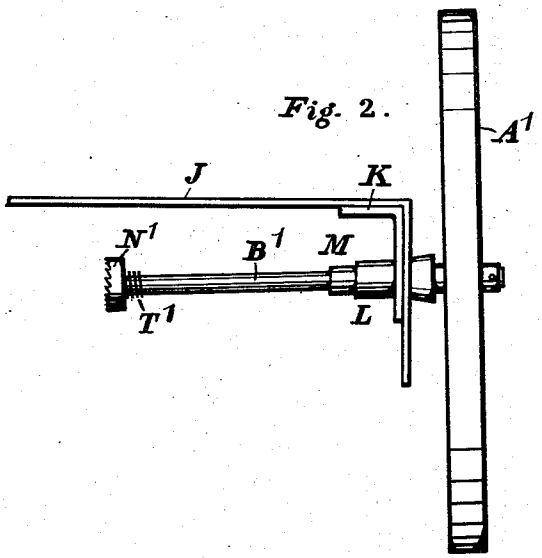


Fig. 2.



Witnesses

C. G. Crannell

E. G. Corser

Inventor

Albert Armitage,

By Geo. B. Selden,

Attorney

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A. ARMITAGE.

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(No Model.) 2 Sheets—Sheet 2.

Fig. 5.

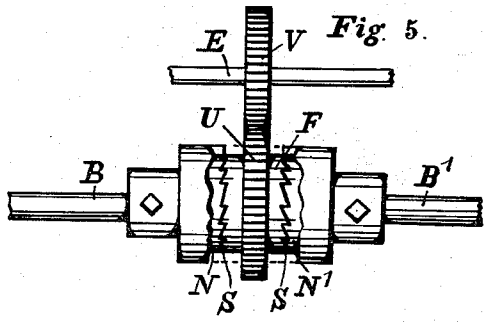


Fig. 6.

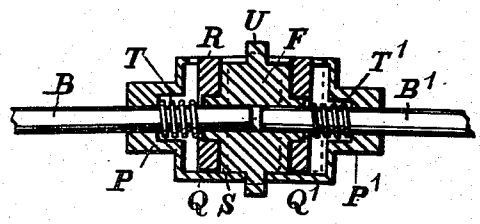


Fig. 7.

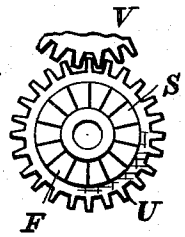


Fig. 8.

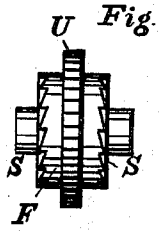


Fig. 9.

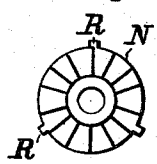


Fig. 10.



Fig. 11.

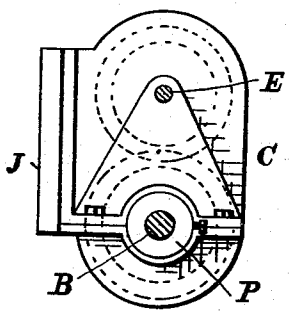
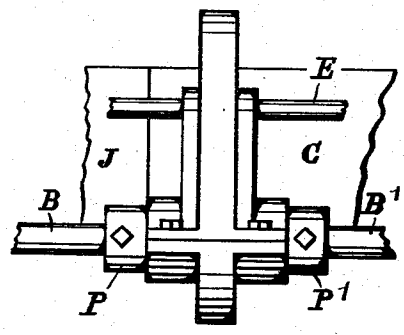


Fig. 12.



Witnesses
E. J. Corser
C. F. Cramell

Inventor
Albert Armitage.
By Geo. B. Selden
Attorney

UNITED STATES PATENT OFFICE.

ALBERT ARMITAGE, OF FAIRPORT, NEW YORK, ASSIGNOR OF ONE-HALF TO EDSON J. CORSER, OF MACEDON, NEW YORK.

GRAIN-DRILL.

SPECIFICATION forming part of Letters Patent No. 665,047, dated January 1, 1901.

Application filed February 13, 1900. Serial No. 5,067. (No model.)

To all whom it may concern:

Be it known that I, ALBERT ARMITAGE, a citizen of the United States, residing at Fairport, in the county of Monroe, in the State of New York, have invented certain Improvements in Grain-Drills, of which the following is a specification, reference being had to the accompanying drawings.

My invention relates to certain improvements in grain-drills, which improvements are fully described and illustrated in the following specification and the accompanying drawings, the novel features thereof being specified in the claims annexed to the said specification.

In the accompanying drawings, representing a grain-drill embodying my improvements, Figure 1 is a rear elevation. Fig. 2 is a partial plan view of the divided axle. Fig. 3 is an elevation of the axle journal-box as seen from the inside. Fig. 4 is a plan view of the journal-box. Fig. 5 is an elevation of the clutches. Fig. 6 is a longitudinal section of the same. Figs. 7 and 8 represent the double-faced driven member of the clutch. Figs. 9 and 10 represent one of the driving members. Fig. 11 is a side view of the casing surrounding the clutches. Fig. 12 is a rear view of the same.

A A′ represent the ground or carrying wheels, B B′ the sections of the divided axle, and C the housing or casing surrounding the clutches.

D is the hopper, to which is attached the seed-distributing mechanism, which may be of any usual or preferred type.

E is the counter-shaft, which is rotated by gears or a chain and sprockets from the driven member F of the clutches. The counter-shaft is arranged to operate the grain-feeding mechanism G, being provided with a clutch and gears or chain to operate the grain-shaft H.

I represents one of the hoes, which may be of any preferred number, corresponding with the feeding devices. The hoes are of any ordinary or preferred construction, and any suitable mechanism is employed for raising, lowering, or shifting them. The drill may also be provided with any suitable fertilizer attachment. Suitable mechanism may be employed for varying the rate of the feed of the grain.

J represents the frame or, as it is usually called, the "bed." It consists of a suitable bar of metal, bent backward at each end and having the brackets K attached at the corners, which brackets carry the adjustable or self-lining journal-boxes L. The axle-sections pass through these journal-boxes. The brackets are provided with openings through which the boxes are inserted.

M, Figs. 3 and 4, represents one or more ribs which fit in slots in the openings through the brackets, so as to prevent the rotation of the boxes.

The wheels A A′, which may be of any ordinary or preferred construction, are fastened rigidly on the outer ends of the axle-sections, so that the sections revolve with the wheels.

The drill is provided with any suitable framework, to which the bed is attached.

At their inner ends the axle-sections are provided with the clutches N N′, which engage with the double-faced clutch member F. The construction will be understood from Figs. 5 and 6.

P P′ represent flanged collars or bosses fastened on the ends of the axle-sections, so as to rotate therewith. The driving members N N′ of the clutches are located within the flanges Q Q′ of the collars, being provided with ribs R, which engage with slots in the flanges, so that the clutch members are caused to rotate with the collars, while being left free to slide lengthwise to engage with or disengage from the teeth S on the driven member F. Suitable springs T T′ are employed to urge the driving members toward the driven member. The teeth on the different members of the clutches are made of any suitable shape and number, adapted to drive the central member from either axle-section. The driven member F is provided with a ring of teeth or gear U, which engages with the gear V on the counter-shaft E. When at any time during the operation of the drill the wheel A′ revolves faster than A, the clutch N′ will drive the central member F, the member N yielding outward on its spring and its teeth slip-

ping over the teeth of the driven member. A similar operation takes place when the wheel A revolves faster than the wheel A', the clutch N' automatically disengaging itself from the driven member. In this way provision is made for keeping the grain-feeding mechanism continuously in operation from one or the other of the wheels, which in turning the drill will revolve at different speeds. When the drill is backed up, both clutches disengage themselves and no grain is fed. At the same time the divided axle enables me to set the carrying-wheels at a suitable pitch, with their upper edges farther apart than the lower and with the spokes vertical, or nearly so, below the hub, a condition which, as is well known, secures the greatest durability. This arrangement also prevents the wheels from rubbing against the ends of the hopper, as frequently happens from the spring or wear of a straight axle.

The housing or casing C is attached to the bed and projects rearward, so as to support the inner ends of the axle-sections and to inclose the gearing. The casing may be made in two or more parts separable from each other, as shown. The collars P P' revolve within suitable bosses on the casing, which is also provided with bosses which support the counter-shaft.

I claim—

1. The combination with the mechanism of a grain-drill, of the divided axle, the carrying-wheels, and means for operating the seed-distributing device from either portion of the axle, said means having a sliding connection with the axle to permit variable speeds of the parts thereof without interfering with the operation of the seed-distributer.

2. In combination with the mechanism of a grain-drill, of a divided axle, carrying-wheels attached thereto, a clutch member to operate the seed-distributer, and means to drive said clutch member, comprising members coöperating with said clutch member and each having a sliding connection with one of the axle-sections, substantially as described.

3. In combination with the mechanism of a grain-drill, of a divided axle, a clutch member to operate the seed-distributer, members coöperating with said clutch member, said latter members having a sliding connection with the axle, and springs for holding said latter members normally in operative situation with the clutch member.

4. The combination with the mechanism of a grain-drill, of a divided axle, a driven clutch member to operate the seed-distributer, driving clutch members to coöperate with the driven clutch member, collars attached to the axle-sections, said driving clutch members having a sliding connection with the collars.

5. The combination with the mechanism of a grain-drill, of a divided axle, a driven clutch member to operate the seed-distributer, driving clutch members to coöperate with the driven clutch member, collars attached to the axle-sections, said driving clutch members having a sliding connection with the collars, and springs for normally maintaining coöperative situation of the driven and driving clutch members.

ALBERT ARMITAGE.

Witnesses:
E. J. CORSER,
GEO. B. SELDEN.