(No Model.) 2 Sheets—Sheet 1.

# G. O. KIVLEY.

## BROADCAST SEEDER.

No. 304,656. Patented Sept. 2, 1884.

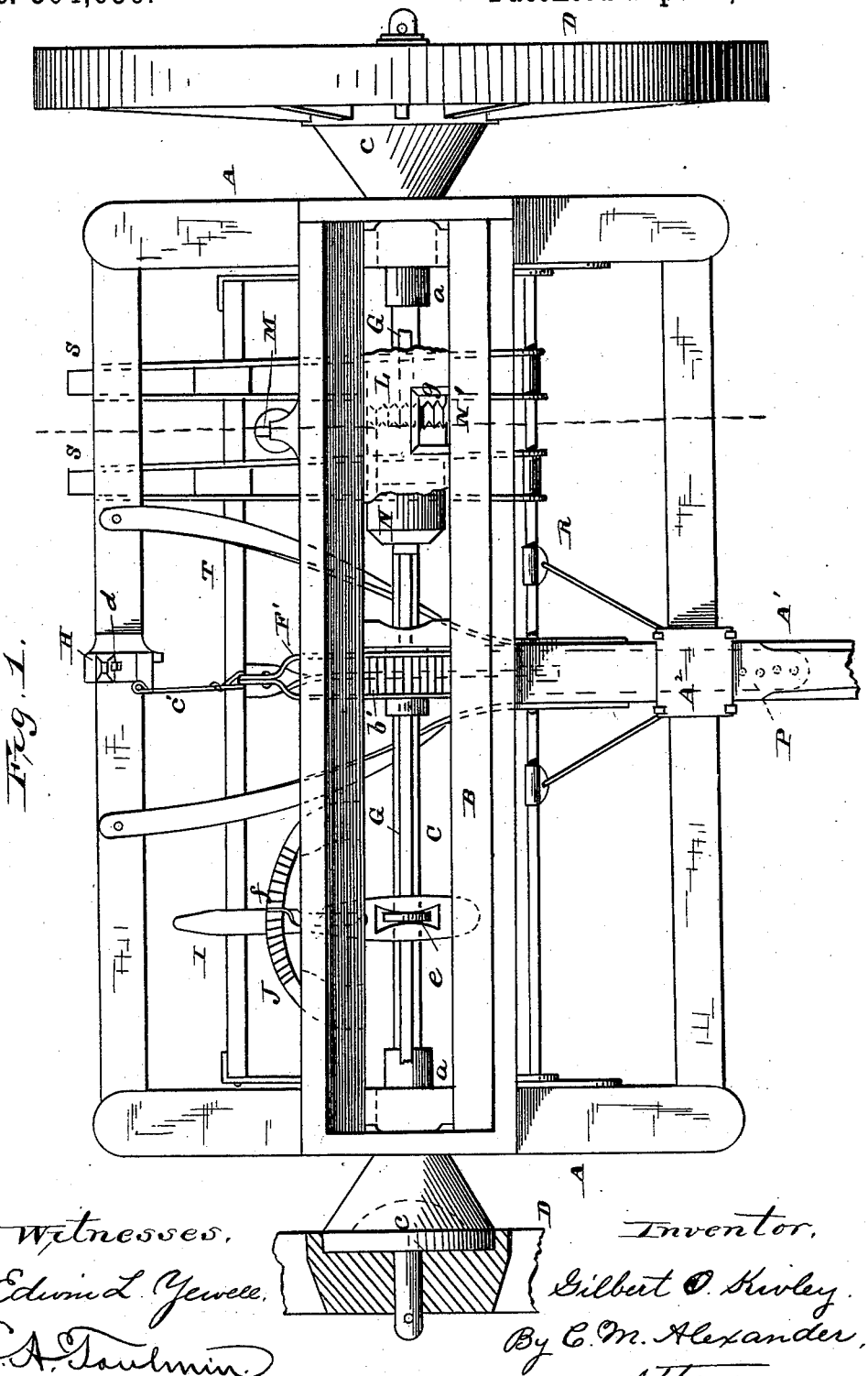

Fig. 1.

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H. A. Toulmin

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(No Model.) 2 Sheets—Sheet 2.

# G. O. KIVLEY.

## BROADCAST SEEDER.

No. 304,656. Patented Sept. 2, 1884.

Fig. 2.

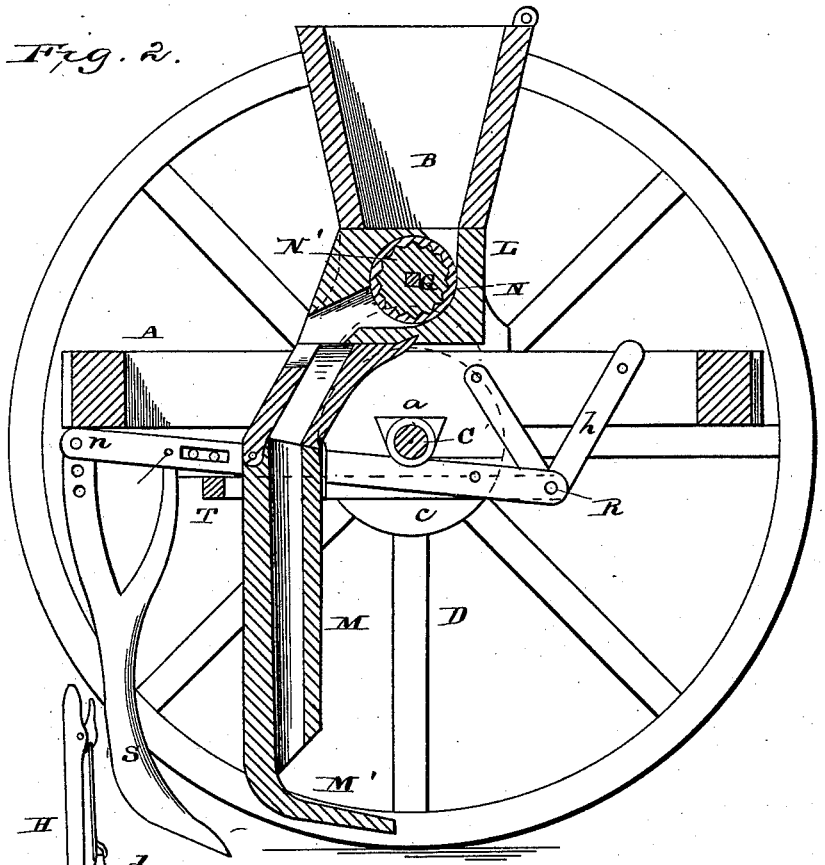



Fig. 3.

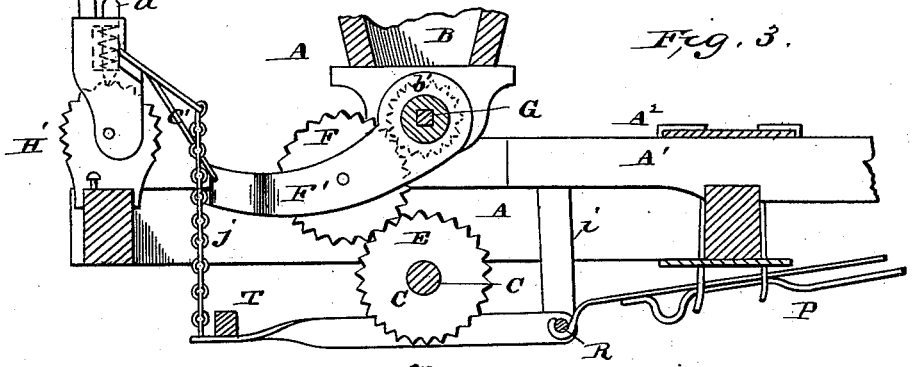
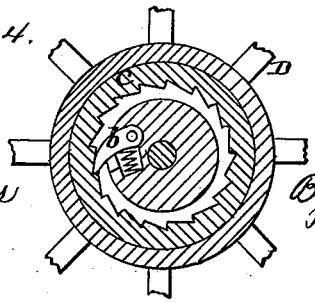



Fig. 4.




Witnesses.
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Inventor.
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# UNITED STATES PATENT OFFICE.

GILBERT O. KIVLEY, OF LAC QUI PARLE, MINNESOTA.

## BROADCAST-SEEDER.

SPECIFICATION forming part of Letters Patent No. 304,656, dated September 2, 1884.

Application filed June 14, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, GILBERT O. KIVLEY, of Lac Qui Parle, in the county of Lac Qui Parle, and in the State of Minnesota, have invented certain new and useful Improvements in Broadcast-Seeders; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing, and to the letters of reference marked thereon, making a part of this specification.

This invention relates to improvements on broadcast-seeding machines wherein any desired number of drags or hoes can be used in combination with adjustable seed-dischargers, which are so constructed that the flow of seed from all of them can be regulated as desired, or cut off, whether the machine be in motion or at rest.

The invention also relates to means for transmitting motion from the axle of the transporting-wheels to the rotary shaft of the distributors by gear-wheels applied to the machine at the middle of the length of the seed-hopper.

Other features of my invention, together with those above referred to, will be fully understood from the following description, when taken in connection with the annexed drawings, in which—

Figure 1 is a plan view of the machine, parts of which are broken away, and parts are shown in section. Fig. 2 is a vertical longitudinal section through the machine, taken in the plane indicated by the dotted line on Fig. 1. Fig. 3 is a vertical longitudinal section in detail, taken through the gearing and adjusting devices therefor, also showing the lifting bar or frame for the drags or hoes and the clevis for the whiffletree arranged below the draft-tongue. Fig. 4 is a section through one of the hubs of the transporting-wheels, showing the pawl and ratchet-teeth therein.

The letter A designates a rectangular draft-frame, on which is secured a seed-hopper, B, that is mounted on said frame over the axle C of two transporting and driving wheels, D D. The axle C turns in long tubular bearing *a a*, secured to the under sides of the longitudinal beams of the frame, and this axle engages with the hubs of wheels D D by means of spring-actuated pawls *b* on the hubs of the latter and and ratchet-teeth on the faces of hubs *c*, which are keyed to the axle. By these means the axle will be turned when the machine is moved forward, and when the machine is backed the wheels will turn freely around the axle.

At the middle of the length of the axle, and keyed on it, is a spur-wheel, E, which is intended, when desired, to engage with a spur-wheel, F, that has its bearings in a vertically-swinging frame, F′, hung on a square rod, G. This rod is supported in suitable bearings under the seed-hopper, and on it is applied a pinion spur-wheel, *b′*, with which the spur-wheel F constantly engages. The rod G is endwise movable through the wheel *b*, and it receives rotation from the spur-wheel E on the axle when the wheel F is engaged with it. The rear extremity of the frame F′ is hung by a chain, *c′*, from a hand-lever, H, that is pivoted to a toothed segment, H′, and provided with a latch, *d*, for locking lever H at any desired angle. A wheel, *e*, is keyed on the square rod G, which turns in a slot made through a hand-lever, I, pivoted to the seed-hopper and extended back through a slot made through a toothed segment, J. By vibrating the lever I the rod G can be given endwise movement, whether it be rotating or not, and by means of a spring-catch, *f*, the lever I can be engaged with the fixed segment J at any desired angle.

The drawings show but one of the seed-dischargers; but in practice I may use any desired number of them, according to the length of the hopper, and I shall use two hoes or drags, S S, for each discharger, as will be presently explained.

L designates the bearing-box of the discharger, which is provided with an oblong opening on top to receive into it from the hopper the seed. This box L is rigidly secured to the bottom of the hopper, and to its discharge-bottom is pivoted the sectional guide M, which conducts the downflowing seed down to a scattering lip or foot, M′. By pivoting the guide to the box L it will yield backward and not be broken should it meet with an obstruction. Inside of the box L, and applied on the rod G, are two cylinders, both of which turn with this rod. The cylinder N is hollow,

and it is keyed fast to rod G. The solid cylinder N′ allows the square rod G to move endwise through it, and this cylinder is arranged to move endwise inside of the cylinder N, the inner end of which latter is serrated to enter spaces between corresponding teeth, *g*, on the circumference of the solid cylinder N′. Between the teeth *g* and that end of the cylinder N′ which is received in the cylinder N and on the circumference of the former are longitudinal grooves, which afford cells for the seed to be carried around and be discharged into the sectional guide M. It will be seen that the discharging capacity of the seed-distributer can be regulated by adjusting the cylinder N on the cylinder N′, and that the discharge can be entirely cut off, if desired.

A′ designates the draft-tongue, which is rigidly secured to the draft-frame A by back braces, and also by means of a clip, $A^2$; and P designates a draft-clevis for the adjustable attachment of a whiffletree below the draft-tongue. The rear part of the clevis extends through the clip-plates, and is secured to a horizontal transverse rod, R, which has its end bearing in hangers *h*, secured to the draft-frame, and to an intermediate hanger, *i*, secured to the rear part of the draft-tongue. To the rod R are pivoted the arms to which the hoes or drags S are pivoted. I also pivot to rod R the arms of a lifting and supporting bar, T, for said hoes or drags. The arms of the latter extend over the bar T, which is connected to the hand-lever H by means of a chain *j*, as shown in Fig. 3. It will thus be seen that the hoes or drags S are lifted and depressed by means of the said hand-lever H at the same time that the wheel F and its frame are adjusted.

If it is desired to run the hoes or drags without scattering seed, the chain *c* is detached from the lever H and attached to a hook, which will hold up the frame F′ and suspend the wheel F free from the wheel E on the axle.

I construct the hoes S with long curved points, so that they will readily cut the sod and scour better on old ground. The upper part of the shank of each tooth is bifurcated, and the rear prong has a number of holes through it to receive a bolt, *n*. The front prong is pivoted to the arms of the hoe, and the angle of the tooth can be changed for regulating the depth of running by inserting the bolt *n* through different holes in said rear prong.

Having described my invention, I claim—

1. The combination, with the serrated cylinders and their actuating mechanism, of the sliding bar carrying one of the cylinders and having on it a small wheel, the hand-lever provided near its fulcrum with a slot having convex sides, and adapted to receive a portion of the said wheel, and the toothed segment holding, by means of a pawl, the lever in place, the several parts combining to regulate the flow of the seed, substantially as and for the purpose specified.

2. In a broadcast-seeder, the combination of the serrated cylinders connected to the axle by disengageable gearing, with an adjusting mechanism consisting of a wheel secured to the shaft carrying the cylinders and engaging in a convex-sided slot in a lever, which is retained in position by a pawl and toothed segment, the adjustable hoes operated by the disengaging mechanism of the cylinders and having a bifurcated sustaining end, one portion of which is perforated for angle adjustment, and the axle having on each end a hub having ratchet-teeth recessed in it, and which engage with a spring-actuated pawl in the wheel-hubs, the whole operating substantially as described.

In testimony whereof I affix my signature, in presence of two witnesses, this 5th day of April, 1882.

GILBERT O. KIVLEY.

Witnesses:
J. P. JACOBS,
J. C. POPE.