

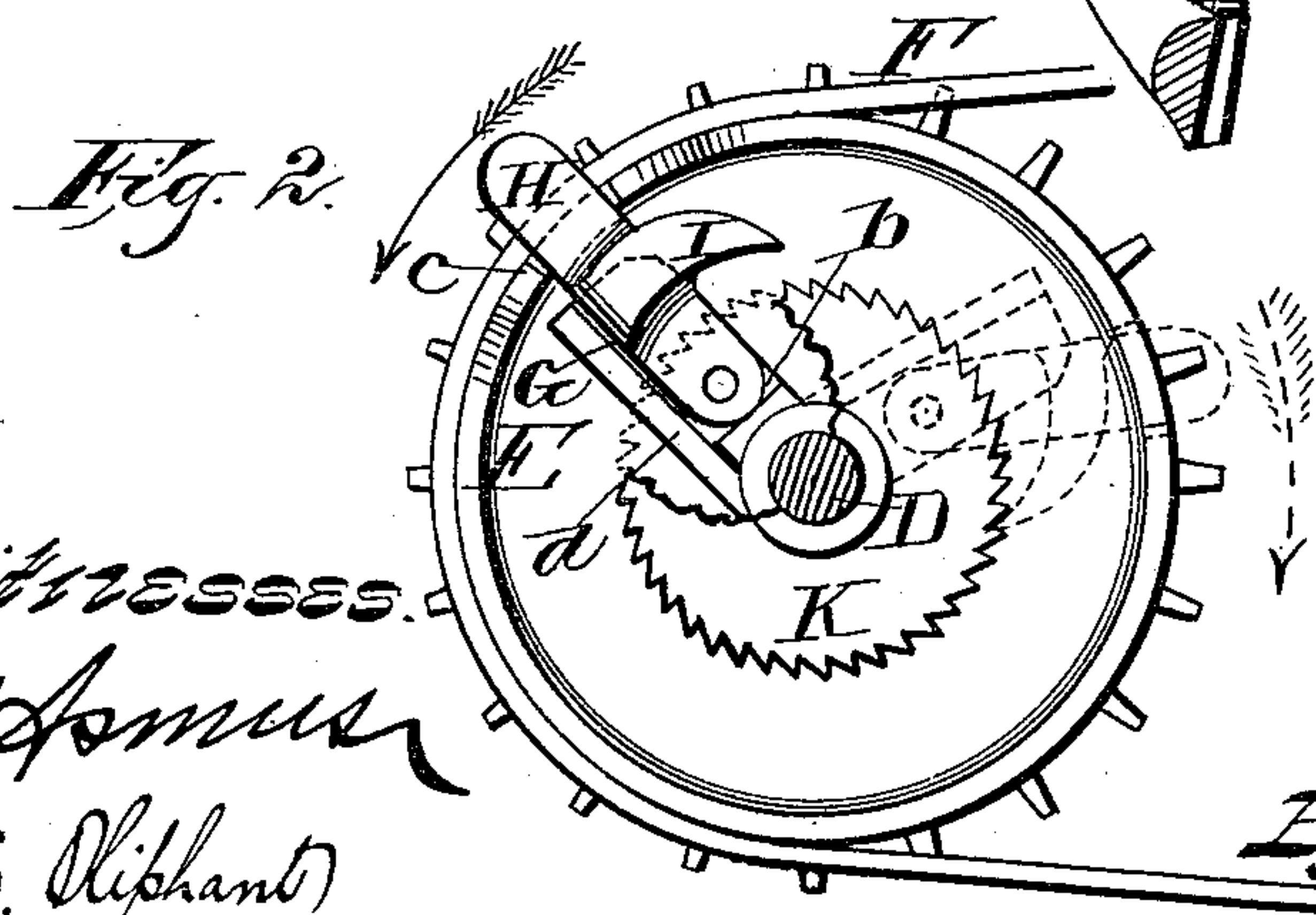
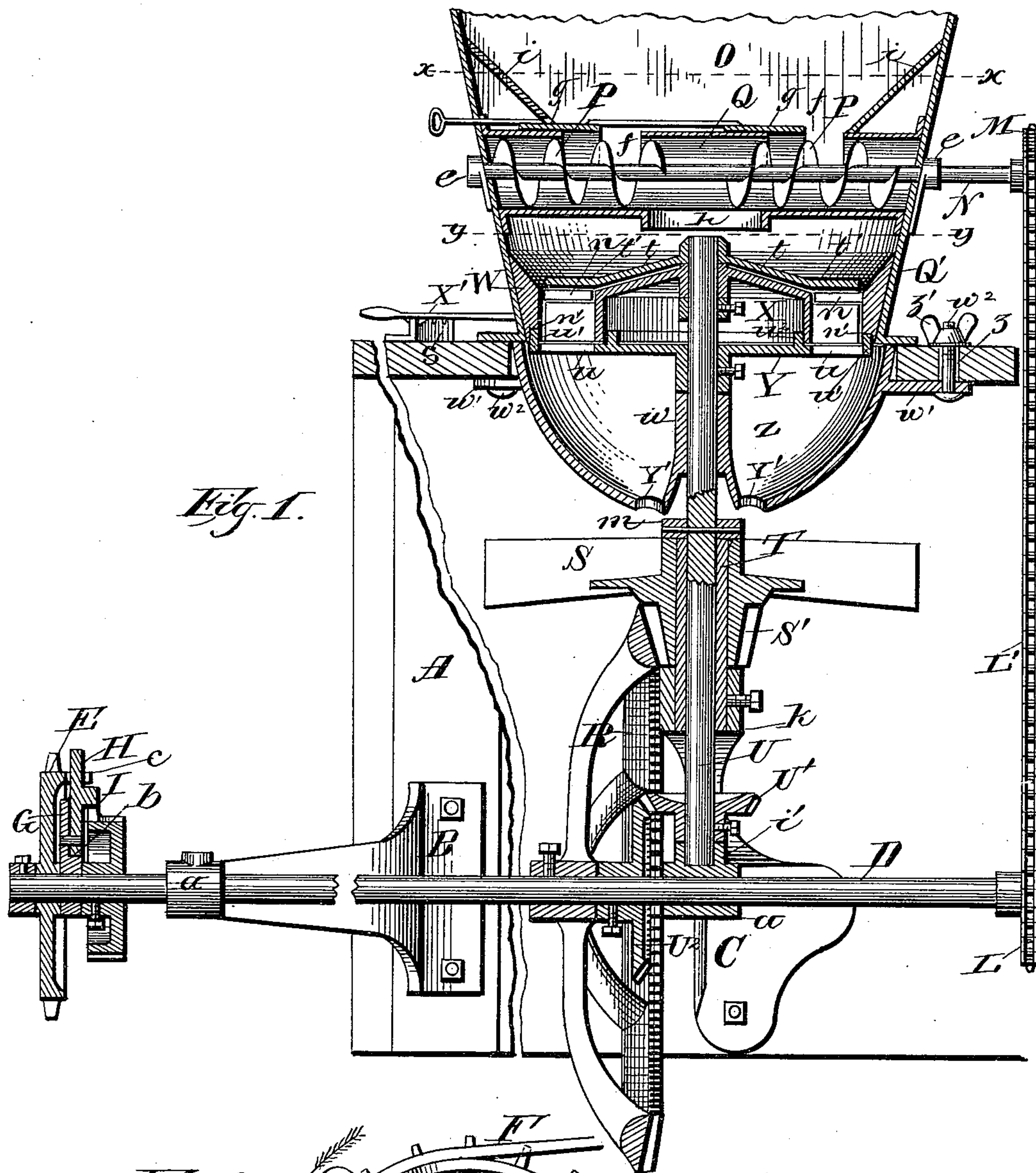
(No Model.)

2 Sheets—Sheet 1.

M. S. FIELD.
SEED SOWER.

No. 350,821.

Patented Oct. 12, 1886.



Witnesses.

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UNITED STATES PATENT OFFICE.

MARTIN S. FIELD, OF RACINE, WISCONSIN.

SEED-SOWER.

SPECIFICATION forming part of Letters Patent No. 350,821, dated October 12, 1886.

Application filed July 29, 1886. Serial No. 209,420. (No model.)

To all whom it may concern:

Be it known that I, MARTIN S. FIELD, of Racine, in the county of Racine, and in the State of Wisconsin, have invented certain new and useful Improvements in Force-Feed Seed-Sowers; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention relates to certain new and useful improvements in broadcast seed-sowers; and it consists in certain peculiarities of construction, as will be fully described hereinafter with reference to the accompanying drawings, in which—

Figure 1 represents a vertical transverse section of my seeder; Fig. 2, a detail view of the clutch mechanism; Fig. 3, a horizontal section on line *y y*, Fig. 1; Fig. 4, a detail view of the cut-off plate; Fig. 5, an inverted detail view of the seed-passages; Fig. 6, a plan view of the delivery-shell; and Fig. 7, a horizontal section on line *x x*, Fig. 1.

Referring by letter to the drawings, A represents a right-angular frame that supports the operative elements of my seeding-machine, said frame being designed for attachment to the rear of an ordinary farm-wagon. Suitably secured to the frame A are brackets B C, each provided with bearings *a* for a horizontal shaft, D, the latter having loosely journaled thereto at one end a sprocket-wheel, E, that is designed to have a chain-connection, F, with a similar wheel that is usually made fast to the rear axle of the vehicle to which my device may be attached. An arm, G, offset at *b*, is also loosely journaled to the shaft D, immediately adjacent to the inner side of the wheel E, and to this arm is pivotally united another arm, H, that carries a pawl, I, said wheel being provided with a recessed projection, *c*, that engages the upper end of the latter arm.

When the vehicle moves forward, the pivotal arm H is carried by the loose sprocket-wheel in the direction of the dotted arrow, Fig. 2, until the pawl I comes into engagement with a ratchet-wheel, K, keyed to the shaft D, contiguous to the part G. This engagement of the pawl and ratchet imparts motion to the shaft D, and through the medium of suitable gear to other parts of the machine, as will be hereinafter more fully de-

scribed. In case the vehicle is backed the sprocket-wheel E will be revolved in the direction of the full line-arrow, Fig. 2, and thereby automatically disengage the pawl I from the ratchet K, and the arm H coming in contact with a flange or stop, *d*, on the part G, both will be carried around with said sprocket-wheel, thereby preventing the working of the seeding mechanism, and consequent waste of seed, during such time as the vehicle may continue to back. Keyed to the other extremity of the shaft D is a sprocket-wheel, L, having a chain-connection, *L'*, with a similar wheel, M, fast on a shaft, N, that has its bearings *e* in the seed-hopper O of my device. The shaft N carries oppositely-arranged spiral conveyers P, that operate within a housing, Q, secured to the interior of the hopper O, said housing being provided with inlet-openings *f*, that have their area regulated by means of a slide, *g*, and a central outlet-opening, *h*, through which the seed is forced by the action of the conveyers P.

The hopper O is preferably of rectangular form with tapering sides and ends; and in order to facilitate the flow of the seed to the conveyers P, I employ incline plates *i*, that lead down from said hopper ends to the inlet-openings *f* of the housing Q.

Keyed to the horizontal main shaft D is a large beveled gear-wheel, R, that meshes with the bevel-toothed hub S' of a distributor, S, this hub fitting a detachable sleeve, T, on a vertical shaft, U, that is stepped in a stud, *i'*, of the bracket C, said sleeve being made fast in an arm, *k*, of this bracket, while the distributor is prevented from vertical displacement by a collar, *m*, fast on the latter shaft. The vertical shaft U is provided near its lower end with a bevel gear-wheel, U', that meshes with a similar wheel, U², on the main shaft D. The sleeve T, that is simply a section of ordinary tubing, forms a bearing for both the distributor-hub S' and the vertical shaft U, and when worn by the friction of both these parts can be readily replaced at a trifling cost, this being an especial feature of my device, from the fact that this sleeve takes up all the wear that would otherwise come on said hub and vertical shaft, it being of softer material than either of the latter in order to accomplish this result. An annulus, W, is suitably

secured in a circular casing, Q', the latter forming a continuation of the hopper Q, and this annulus W is provided with right-angular wings n , that extend in toward the center.

5 Loosely journaled to the vertical shaft U, near its upper end, is a shell, X, that is also provided with right-angular wings p , that come under the corresponding parts of the annulus, and in connection therewith form a series of
10 passages for the seed as it is forced down from the housing Q through the outlet-opening h . Between two of the wings on the shell X, I provide a web, r , to which I secure a lever, X', operative in a slot, r' , cut through the
15 annulus and hopper, and by this lever I adjust said plate so as to increase or diminish the openings to the seed-passages, this lever being retained in position by a rack, s , on the horizontal portion of the frame A, while the
20 web r prevents the slot r' from getting clogged with seed.

To the extreme upper end of the vertical shaft U is made fast a cut-off, composed of a transverse arm, t , that has its ends terminated
25 in segment-plates t' , the latter covering certain of the openings to the seed-passages, while the openings to the other of said passages in the series are exposed. Immediately below the shell X the shaft U has fast thereon a disk,
30 Y, provided with diametrically-opposed openings u , having an area equal to that of the several seed-passages when the latter are adjusted to their greatest extent, said openings in the disk being in register with the central part of
35 the segment-plates t' , that form parts of the revolving cut-off. The solid part of the disk Y forms a movable bottom for the several seed-passages, and its openings u are brought into register with one and another of said pas-
40 sages. Thus while the seed is accumulating in one set of passages that already collected in others of the series will be escaping through the openings in the disk Y down into a delivery-shell, Z, from whence it is finally dis-
45 charged onto the distributor S.

The delivery-shell Z is cup-shaped, and divided into two compartments by a transverse partition, v , each of these compartments being provided with an escape-opening, Y', for
50 the seed. The central hub, w , of the shell Z fits upon the shaft U and forms a bearing for the latter, while projecting from the rim of said shell are perforated flanges w' , through which pass bolts w'' , that engage curved slots z
55 in the horizontal portion of the frame, each bolt being provided with a set-nut, z' . By this means the shell Z may be readily adjusted to regulate the throw of the seed; or, in other words, by this adjustment the seed may be
60 equally distributed on each side the center of the machine, or more or less thrown to one side only thereof.

The interior faces of each compartment of the delivery-shell lead directly to the escape-
65 opening at the bottom, and thus the seed is evenly fed to the distributor with the least pos-

sible resistance, and to prevent said seed escaping from between the adjacent edges of the annulus W, disk Y, and shell X, I provide said
70 shell with upwardly-extended flanges $u' u''$, the one u' fitting a corresponding offsetted portion, n' , of the annulus, and the one u'' coming inside the shell.

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

1. In a seeding-machine, the main shaft thereof provided with a loose sprocket-wheel arranged to be operatively connected to the driving-power, in combination with a clutch
80 mechanism that comprises an arm, also loose on the main shaft and provided with a suitable stop, another arm pivotally united at its lower end to the former arm, and secured at
85 its upper end to the sprocket-wheel, a pawl carried by the latter arm, and a ratchet-wheel keyed to said main shaft, substantially as and for the purpose set forth.

2. In a seeding-machine, the main shaft thereof provided with a loose sprocket-wheel
90 arranged to be operatively connected to the driving-power, and having its inner face provided with a recessed projection, in combination with an offsetted and flanged arm, also loose
95 on the main shaft, another arm pivotally united at its lower end to the former arm, and having its upper end engaged with the projection on the sprocket-wheel, a pawl carried by the
100 latter arm, and a ratchet-wheel keyed to said main shaft, substantially as and for the purpose set forth.

3. In a seeding-machine, a removable sleeve interposed between the revolving vertical shaft and the horizontal distributor, and means,
105 substantially as described, for rotating said shaft and distributor, as set forth.

4. In a seeding-machine, a rectangular tapering hopper provided with a circular extension that incloses the seed-pockets and an interior housing having inlet-openings in its top
110 and a central outlet-opening in its bottom, in combination with a double conveyer operative in the housing, and means, substantially as described, for rotating said conveyer, as set forth.

5. In a seeding-machine, a rectangular tapering hopper provided with a circular extension that incloses the seed-pockets, an interior housing having inlet-openings in its top
115 and a central outlet-opening in its bottom, an adjustable slide for the former openings, and inclined plates that lead down from the ends
120 of the hopper to said inlet-openings, in combination with a double conveyer operative within the housing, and means, substantially as described, for rotating said conveyer, as set
125 forth.

6. In a seeding-machine, a fixed annulus provided with inwardly-projecting right-angular wings, and an adjustable shell, also provided
130 with right-angular wings extended in a direction opposite those of the former, said parts arranged one above the other and forming a

series of seed-passages, in combination with rotating top and bottom cut-offs, arranged to close certain of the seed-passages while the others in the series are opened, and means, 5 substantially as described, for operating said cut-offs, as set forth.

7. In a seeding-machine, a fixed annulus provided with inwardly-projecting right-angular wings, a loose shell provided with right-angular wings extended in a direction opposite 10 those of the former and having a web between two of its wings, to which is secured an adjusting-lever, said parts arranged one above the other and forming a series of seed-passages, in 15 combination with a rotating top cut-off consisting of a transverse arm terminating in segment-plates, a rotating bottom cut-off consisting of a disk provided with diametrically-opposed openings that register with the central part of the segment-plates, and means, 20 substantially as described, for operating said cut-offs, as set forth.

8. In a seeding-machine, a cup-shaped delivery-shell located below the feed mechanism and centrally divided into two compartments, 25 each compartment having an escape-opening in its bottom, substantially as and for the purpose set forth.

9. In a seeding-machine, a cup-shaped delivery-shell adjustably secured to the support- 30 ing-frame immediately below the feed mechanism and divided into two equal compartments, each of the latter having an escape-opening in its bottom, substantially as and for the purpose set forth.

In testimony that I claim the foregoing I 35 have hereunto set my hand, at Milwaukee, in the county of Milwaukee and State of Wisconsin, in the presence of two witnesses.

MARTIN S. FIELD.

Witnesses:

STANLEY S. STOUT,
N. E. OLIPHANT.