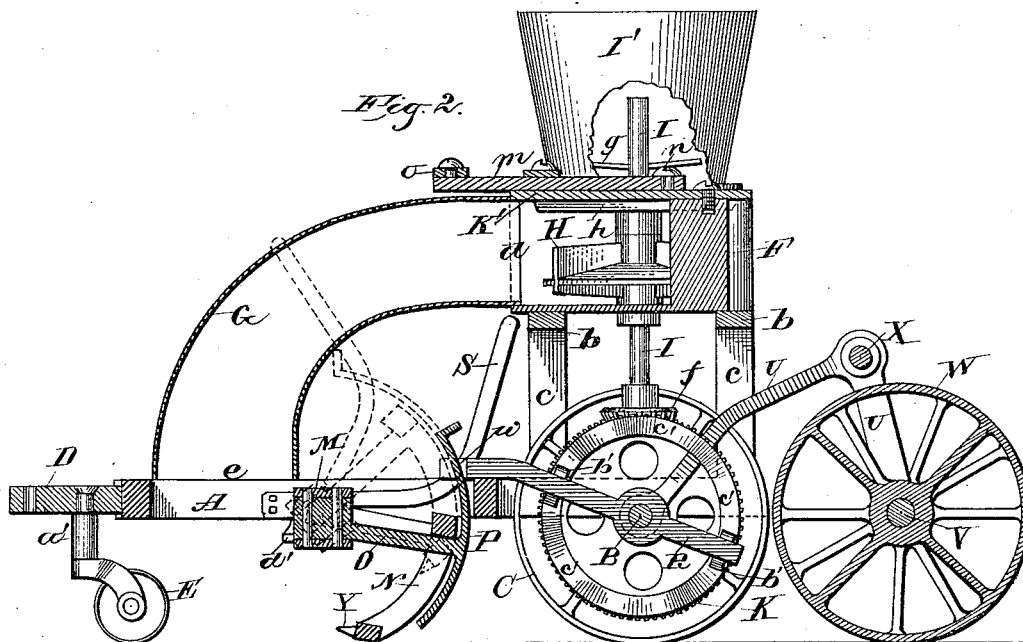
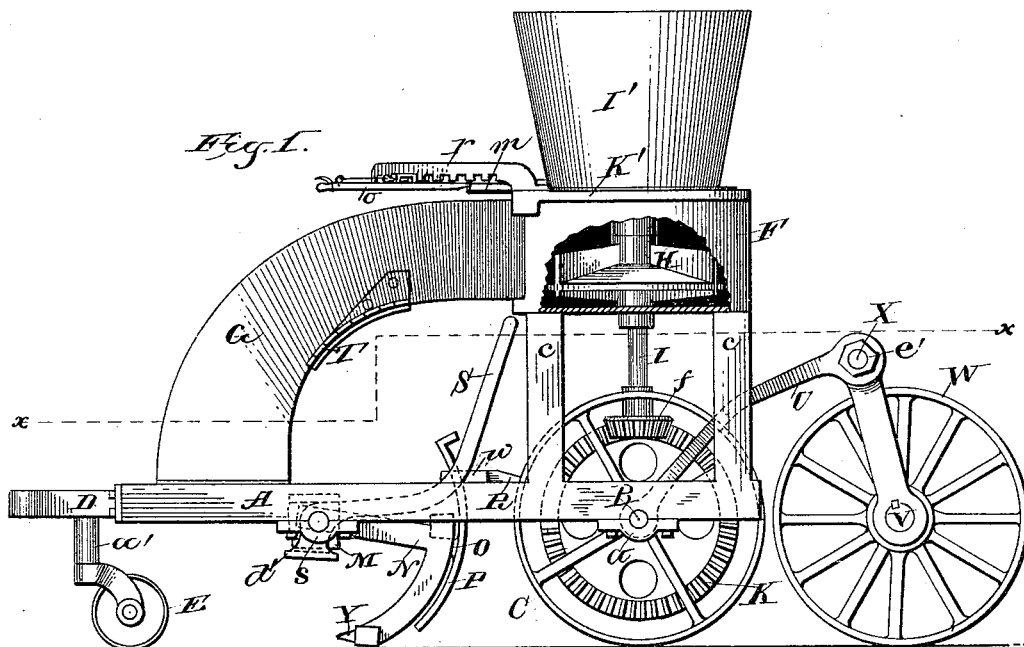


B. M. JOHNSON.

COMBINED SEEDER AND CULTIVATOR.

No. 348,399.

Patented Aug. 31, 1886.



Witnesses:

E. G. Smith

N. E. Oliphant

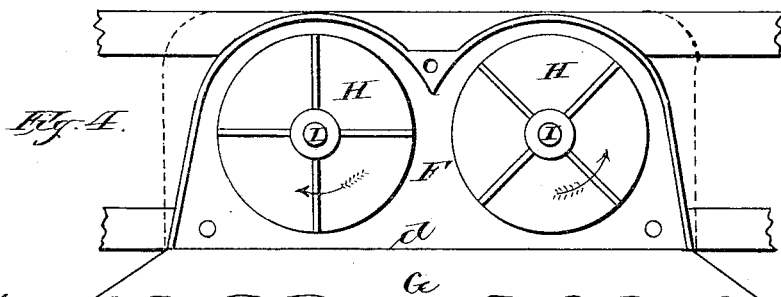
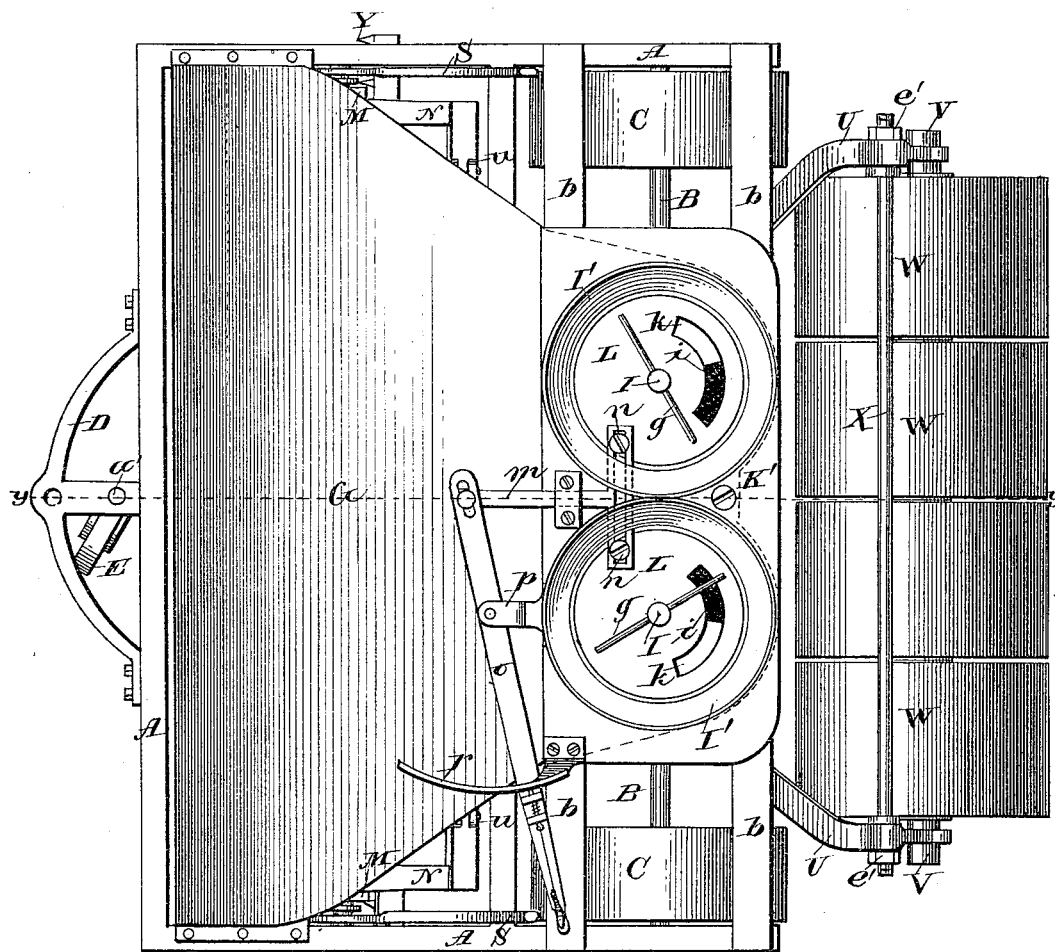
Inventor:

Bert M. Johnson

*By J. H. Underwood
Attorneys.*

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Fig. 3.



Witnesses:

E. G. Johnson

N. E. Oliphant

Inventor:

Bert M. Johnson

By Stout & Underwood
Attorneys.

(No Model.)

3 Sheets—Sheet 3.

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Fig. 5.

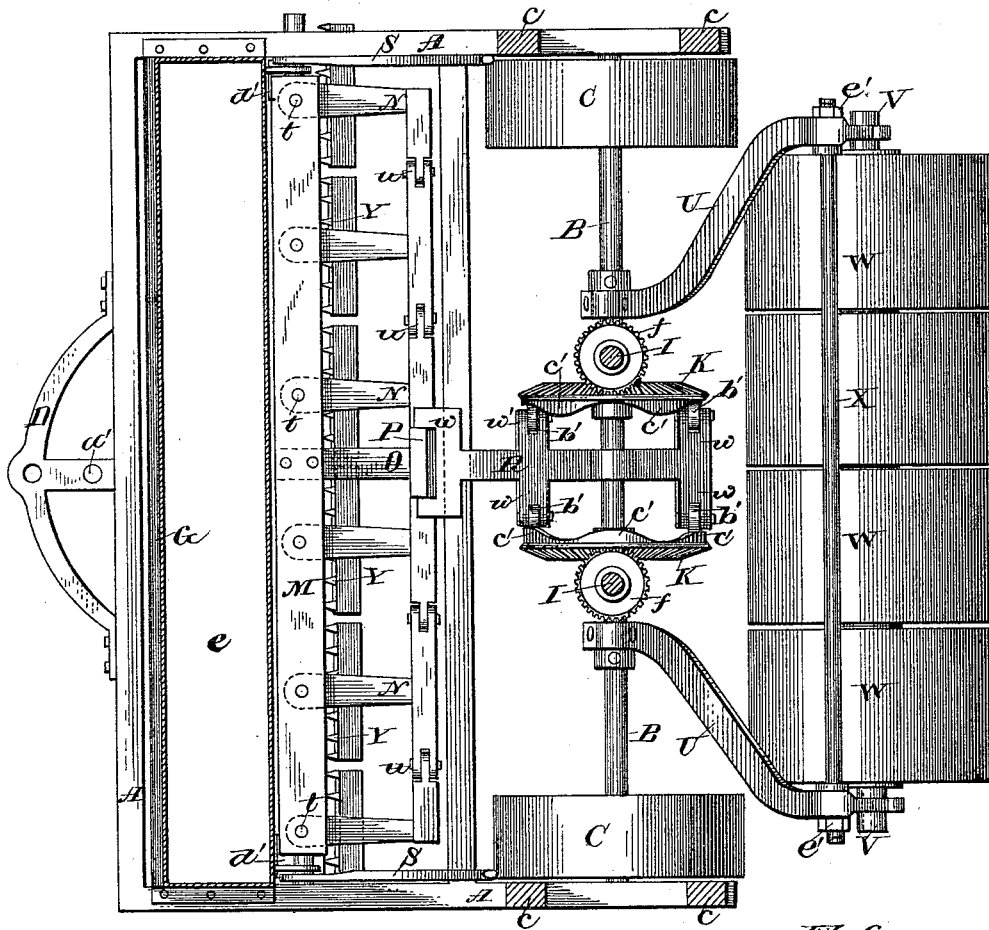
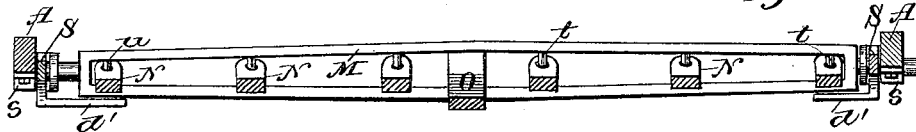


Fig. 6.



Witnesses:

E. G. Sumner
N. E. Oliphant

Inventor:

Bernt M. Johnson

By Stout & Underwood
Attorneys.

UNITED STATES PATENT OFFICE.

BERNT M. JOHNSON, OF RACINE, WISCONSIN.

COMBINED SEEDER AND CULTIVATOR.

SPECIFICATION forming part of Letters Patent No. 348,399, dated August 31, 1886.

Application filed April 20, 1886. Serial No. 199,485. (No model.)

To all whom it may concern:

Be it known that I, BERNT M. JOHNSON, of Racine, in the county of Racine, and in the State of Wisconsin, have invented certain new and useful Improvements in a Combined Seed-er, Cultivator, and Land-Roller; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention relates to 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 side elevation of my invention, with the distributor-chamber partly broken away; Fig. 2, a vertical longitudinal section on line *y y*, Fig. 3, a top plan view; Fig. 4, a top plan view of the distributors; Fig. 5, a plan view taken on line *x x*, Fig. 1, and Fig. 6 a detail view of the breaker-beam.

Referring by letter to the drawings, A represents a rectangular frame adapted to support the several operative elements of my seeder.

Journalled in bearings *a* on the under sides of the frame, at its rear end, is a shaft, B, carrying driving-wheels C, and at the front end of said frame is a bracket, D, from which depends a vertical journal, *a'*, for a pivotal guide-wheel, E. This bracket also forms a means of attachment for a draft-tongue.

The distributor-chamber F is supported on transverse bars *b*, that are united to the main frame A by vertical standards *c*, and extending from the open front *d* of this distributor-chamber to the front of said main frame is a flaring hood, G. The hood G has its discharge-opening *e* extended from side to side of the main frame, and said opening is so arranged that the seed is cast directly upon the ground in a vertical direction immediately in the path of and under the machine, thereby preventing it from being affected by the wind. The distributors H are keyed to vertical shafts I, that carry bevel-pinions *f*, designed to mesh with gear-wheels K, fast on the shaft B, this gearing serving to drive said distributors in the direction indicated by arrows, Fig. 4, so as to insure the best possible cast.

The distributor-shafts I are provided with the usual stirring-pins, *g*, to agitate the seed in

the hoppers I', that are suitably secured to the removable cover-plate K' of the distributor-chamber F.

The cover-plate K' is provided with countersinks *h*, having segmental seed-passages *i*, and pivotally operating in the countersinks are disks or cut-offs L, provided with segmental openings *k*, designed to be brought in and out of register with the seed-passages in said countersinks by a suitable lever mechanism.

The lever mechanism for operating the disks or cut-offs L preferably consists of a T-shaped sliding arm, *m*, having its rear end slotted to receive screws or pins *n*, extending up from said disks, and an arm, *o*, fulcrumed to a lug, *p*, extended from the front of the cover-plate K'. This latter arm is loosely connected to the shank of the one, *m*, and engages a rack, *r*, on an outer edge of the cover-plate, so as to thus retain the cut-offs or disk in the position to which they may have been adjusted, said arm being within easy reach of the operator of the machine. By the construction just described the seed-passages *i* may be either entirely opened or closed, or the degree of opening readily regulated to suit various kinds of seed or the amount thereof desired to be sown.

Fitted in bearings *s* on the under sides of the frame A, near its front end, and to the rear of the discharge-opening *e* of hood G, are the journal ends of a skeleton beam, M, and to vertical pins *t*, arranged at intervals in this beam, are loosely secured a series of angular covering-arms, N, that are hinge-joined one to another throughout the series, as shown at *u*, Fig. 5. This peculiar arrangement of the covering-arms N permits the same to automatically adjust themselves to inequalities in the surface of the ground over which they pass, thereby insuring a perfect covering of the seed. The front edge of the lower portion of each covering-arm N is provided with teeth *y*, that serve to break any clods or lumps of earth that may be in the path of the machine.

Extending rearward from the center of the skeleton beam M is an arm, O, that carries a segment-plate, P. This segment-plate engages the forked end *w* of an arm, R, that is loosely journalled to the shaft B, said arm having lugs *w'*, in which are journalled friction-wheels *b'*, that come in contact with irregular cam-faces

c' on the inner sides of the gear-wheels K. When the machine is in operation, the cam-faces c' on the gear-wheel coming against the friction-wheels or roulettes causes the arm R to slide back and forth on the shaft B, thereby imparting a vibratory movement to the skeleton beam M through the medium of the segment-plate P and arm O, and thus the arms N, secured thereto, are operated to most effectually insure the complete covering of the seed.

When the machine is not sowing, or at other times should it be desirable or necessary to elevate the covering-arms N, this operation is readily effected by means of levers S, secured upon the journals of the skeleton beam M and having right-angular arms d' , that come under against the main portion of said beam, to partially rotate the same in its bearings s.

By having two levers—one at each end of the beam M—the covering-arms may be elevated from either side of the machine, and racks T are secured to the hood G, to engage these levers and retain them in the position to which they may be thrown in elevating said covering-arms.

Loosely secured to the main shaft B are angular brackets U, the outer ends of which form bearings for a shaft, V, and this latter shaft carries a series of land-rollers, W, that serve to pack down the earth after the seed has been sown and covered. The brackets U are held apart and braced by a stay-rod, X, held in position by nuts e' on its screw-threaded ends bearing against the sides of said brackets.

Instead of having two seed-hoppers, I may employ a single seed-box of such dimensions as to cover both cut-offs or disks L, though the two hoppers will be found more convenient in sowing some classes of seed, especially those that require mixing, as such operation can be more thoroughly accomplished in the hood G by the action of the distributors H than by the usual method of mixing in bulk by hand.

My sower is designed to sow any kind of seed, but is more particularly applicable to the sowing of grass-seed, and by its simplicity of construction and operation will effect a saving in time, labor, and expense over the methods commonly employed in this class of work.

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

1. In a seed-sower, a distributor-chamber open at its front end, in combination with a seed-conducting hood extending from said chamber to the front of the machine, as set forth.

2. In a seed-sower, a covering apparatus consisting of a series of angular arms hinged to one another throughout the series and loosely secured to a vibratory beam, as set forth.

3. In a seed-sower, a covering apparatus consisting of a series of angular arms hinged to one another throughout the series and loosely secured to a vibratory beam, and

the lower front edge of each arm provided with a series of teeth, as set forth.

4. In a seed-sower, a covering apparatus consisting of a series of angular arms hinged to one another throughout the series and loosely secured to a vibratory beam, in combination with suitable levers arranged to throw said apparatus in and out of operative position, as set forth.

5. In a seed-sower, a skeleton beam journaled in the main frame, and provided with a series of vertical pins, a series of covering-arms loosely secured to said pins and flexibly joined one to another, a mechanism designed to impart a vibratory movement to said beam, and a lever or levers adapted to partially rotate the same, as set forth.

6. In a seed-sower having its main shaft provided with gear-wheels designed to mesh with pinions on the distributor-shafts, said gear-wheels having their inner sides constructed with irregular cam-faces, in combination with an angular arm loosely hung on said shaft and provided with roulettes adapted to come in contact with the cam-faces of the gear-wheels, and a suitable loosely-hung beam carrying covering arms and operatively connected to said angular arm, as set forth.

7. In a seed-sower, a suitable beam loosely hung in bearings on the main frame and having a series of covering-arms connected thereto, an arm projecting from said beam and carrying a segmental plate, in combination with a forked arm loosely journaled on the main shaft and provided with a series of lugs having roulettes journaled therein, and gear-wheels keyed to said main shaft to mesh with bevel-pinions on the distributor-shafts, and their inner sides provided with irregular cam-faces designed to come in contact with the roulettes, as set forth.

8. In a seed-sower, a main frame having a shaft journaled therein that carries drive and gear wheels, the latter designed to mesh with pinions on the distributor-shafts, a bracket projecting from the front of the main frame and provided with a vertical depending journal for a guide-wheel, and a distributor-chamber mounted on transverse bars united to said main frame, as set forth.

9. In a seed-sower, a distributor-chamber having a removable cover-plate provided with countersinks, cut-off disks pivoted in said countersinks, and said parts respectively provided with segmental openings arranged to be brought in and out of register, in combination with a lever mechanism for operating the disk, as set forth.

10. In a seed-sower, a distributor-chamber open at its front end and provided with a cover-plate having segmental seed-passages, and pivoted cut-offs or disks provided with segmental openings designed to be brought in and out of register with said seed-passages, in combination with a flaring hood extending from the distributor-chamber to the front of the machine, and having its discharge-opening

arranged to deliver the seed directly upon the ground in a vertical direction, as set forth.

11. In a seed-sower, a distributor-chamber having a removable cover-plate provided with countersinks and cut-offs or disks, respectively constructed with segmental openings adapted to be brought in and out of register, and a lever mechanism for operating the latter parts, consisting of a \perp -shaped sliding arm slotted at its rear end to receive screws or pins extending up from said cut-offs or disks, a lever-arm fulcrumed to the cover-plate and loosely connected to the shank of said sliding arm, and a rack secured to said cover-plate to engage the lever-arm, as set forth.

12. In a seed-sower, a hood leading from the distributors to the point of delivery, a vibratory covering apparatus, and a land roller or rollers designed to follow said covering apparatus, as set forth.

13. In a seed-sower, a flaring hood leading from the distributor-chamber to the point of delivery and provided with racks adapted to engage levers operatively connected to a suit-

able beam loosely hung in the main frame and carrying seed-covering arms, as set forth.

14. In a seed-sower, the combination, with its main shaft, of angular brackets loosely secured thereto and braced apart by a suitable stay-rod, a shaft journaled in the outer ends of said brackets, and a series of land-rollers operatively connected to the latter shaft, as set forth.

15. In a seed-sower, the combination, with a distributor-chamber having a flaring hood leading therefrom to the point of delivery, and provided with a cover-plate having seed-passages and cut-offs, of two seed-hoppers suitably secured to said cover-plate, as set forth.

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

BERNT M. JOHNSON.

Witnesses:

H. G. UNDERWOOD,
MAURICE F. FREAR.