

(No Model.)

2 Sheets—Sheet 1.

I. M. SWANK.  
BROADCAST SOWER.

No. 386,416.

Patented July 17, 1888.

Fig. 1.

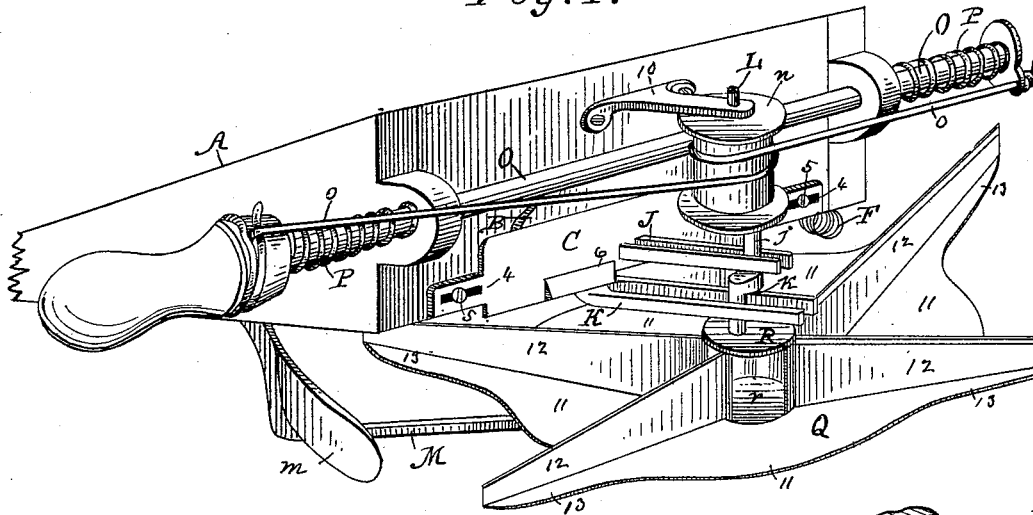


Fig. 3.

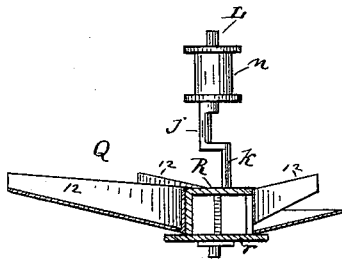


Fig. 4.

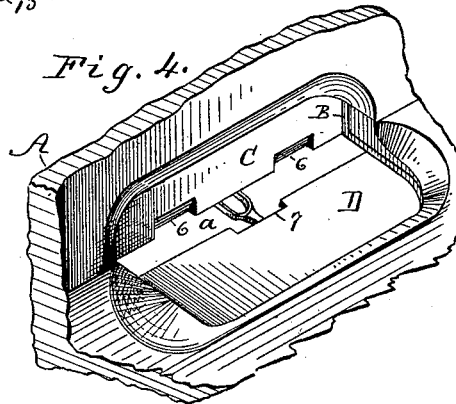
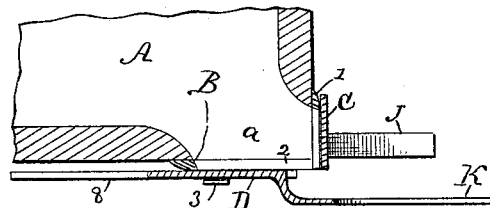


Fig. 5.



WITNESSES:

Thos. Houghton.  
R. B. Turpin.

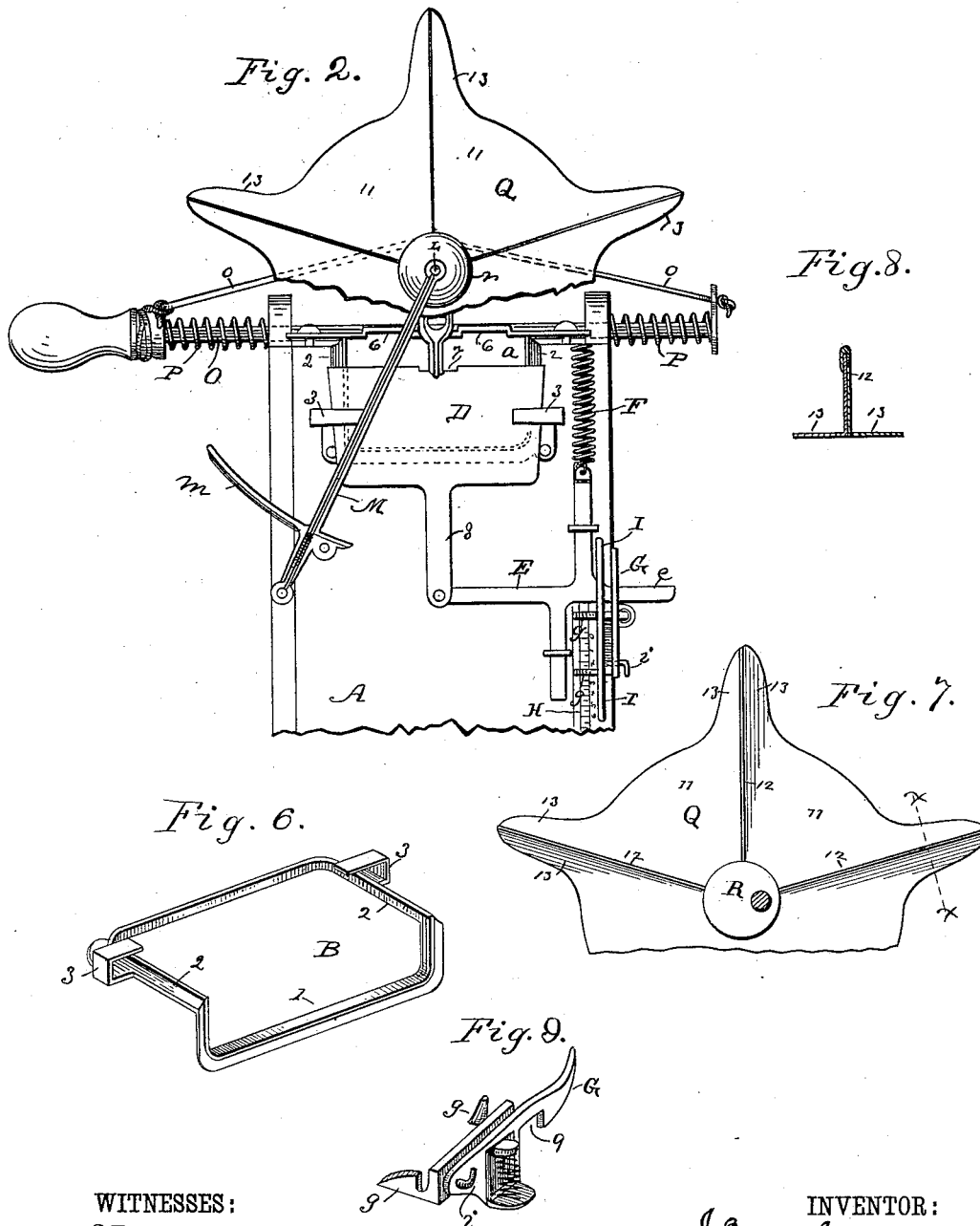
INVENTOR:

I. M. Swank.  
BY Munn & Co.  
ATTORNEYS.

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# UNITED STATES PATENT OFFICE.

ISRAEL MARION SWANK, OF DAYTON, OHIO, ASSIGNOR TO SILAS B. RIT-  
TENHOUSE, OF LIBERTY MILLS, INDIANA.

## BROADCAST SOWER.

SPECIFICATION forming part of Letters Patent No. 386,416, dated July 17, 1888.

Application filed March 15, 1886. Renewed May 3, 1888. Serial No. 272,639. (No model.)

*To all whom it may concern:*

Beit known that I, ISRAEL MARION SWANK, of Dayton, in the county of Montgomery and State of Ohio, have invented a new and useful  
5 Improvement in Broadcast Sowers, of which the following is a specification.

In the drawings, Figure 1 is a perspective view of my improvement. Fig. 2 is a bottom plan view thereof, the distributing-wheel being partly broken away. Fig. 3 is a detail  
10 view of the drive-shaft, the wheel being partly shown. Fig. 4 is a detached perspective view of the meeting edges of the riddle-plates, showing portions of the framing. Fig. 5 is a detached section drawn through the riddle-  
15 plates. Fig. 6 is a detail perspective view of the edge or rim plate. Fig. 7 is a partial top plan view of the distributing-wheel. Fig. 8 is a detached cross-section of one of the ribs of  
20 such wheel, and Fig. 9 is a detail perspective view of the detent.

The invention relates particularly to that class of broadcast sowers in which the seed or other material is fed onto a wheel given a rotary or partial rotary movement, whereby to  
25 discharge the seed by centrifugal force.

The invention consists in the novel construction of the distributing-wheel or scatterer, and in certain other novel constructions and combinations of parts, as will be hereinafter described.  
30

In carrying out my invention I usually secure the several parts hereinafter described to a rim-casing, A, which in practice is secured  
35 around or over the discharge-opening of the bag, box, or hopper; but manifestly such case might be omitted and the parts secured directly to the box or hopper where so desired.

The device constructed as will be described  
40 is designed for sowing all kinds of seeds and commercial fertilizers.

In the construction shown an edge plate, B, is secured around the discharge-opening *a* of the casing. This plate B is formed with right-  
45 angled wings 1 and 2, lapped, respectively, against and secured to the front and under side of the casing. The wing 1 forms a bearing for the upper riddle-plate, C, while the wing 2 is provided with guides 3, which support the  
50 lower riddle-plate, D, and permit the latter to

be moved or oscillated laterally and to be adjusted longitudinally in the operation of the apparatus. Slots 4 are formed in the upper riddle-plate, C, and screws 5 pass through  
55 such slots into the casing or support, securing such riddle-plate so it may be moved laterally.

The upper riddle-plate has its inner lower edge formed with notches or cut-out portions 6, and the edge of plate D meeting the notched edge of plate C has a notch, 7, so that in sow-  
60 ing a small quantity of seed or fertilizer it will be fed through three openings, as will be most clearly understood from Fig. 4.

To the lower riddle-plate I connect, preferably with an extension, 8, thereof, the carrier  
65 E, which is movable longitudinally along the bottom of the case, and is pivotally connected with the plate D, so its longitudinal movement may be transmitted to the plate D without interfering with the lateral movement of  
70 the latter, as will be described. To the carrier, and through the same with the riddle-plate D, is connected a spring, F, by which the said plate D is automatically closed, when the detent presently described is moved to release  
75 the carrier. This detent G is arranged to engage an arm, *e*, of the carrier, and is preferably secured adjustably to the case, so it may be set to register with the divisions or graduations of a scale, H, formed on the case, so the  
80 device may be set to sow any desired quantity of seed. This adjustment of the detent is preferably attained by securing it to the case through the medium of hooks *g* on the detent fitting under a bail-shaped guide, I, on the  
85 case, and a clamping-screw, *i*, threaded in the detent and binding against bail I. The notch 9 of the detent, in which the arm *e* of the carrier is secured, is slightly wider than said arm, so the latter has a slight play, probably of one-  
90 eighth of an inch, which enables the operator to regulate the quantity to be sown on poor or good soil without stopping to vary the set of the detent.

The riddle-plates are provided with forward-  
95 ly-extended arms J K, which are slotted to fit over the cranks of the drive shaft, and form the connections between the riddle-plates and said cranks in the operation of the device.

The drive-shaft L is pivoted at its upper end  
1

in the bracket 10 and at its lower end in one end of the combined arm and brace M, which has its other end secured to the casing. To this arm M is secured the guard *m*, usually

5 formed integral with the arm, as shown. To the drive-shaft N is secured the pulley *n*, and on the shaft are formed cranks *j* and *k*, which engage connections J K and serve to oscillate the riddle-plates as the shaft is re-

10 volved. The rod O, made preferably of iron, serves to oscillate the shaft N, and is suitably supported so it may be reciprocated. This rod is formed, preferably, of metal, and has an op-  
15 erative connection with the pulley *n* of shaft N. This may be effected by the construction shown, or by forming the pulley with gear-teeth and providing rod O with a rack meshing therewith; but the construction as shown is  
20 preferred. In this construction a bow-string, *o*, is secured at its opposite ends to the rod O and wrapped around the pulley *n*.

To prevent any jar or jolt in the reciprocation of the rod O, I provide springs P, bearing between the casing and shoulders on the  
25 rod O, and serve to cushion such rod in both directions of movement. On the drive-shaft, and below the discharge of the riddle-plates, I secure the scatterer or distributing-wheel Q,  
30 formed with a central or base plate, 11, ribs 12, and extensions 13.

It is preferred to secure the center plate and ribs forming the body of the wheel to the cast-metal hub R, formed on the drive shaft. This  
35 hub is formed with a lateral flange, *r*, at its lower edge, on which the center plate of the wheel rests.

It will be noticed that the distributing-wheel is depressed at the center and rises toward its  
40 outer edge, by which construction the seed or fertilizer as it leaves the wheel is given an upward throw, and may be thereby cast farther. It will also be noticed that the extensions 13 are ranged on each side of the ribs, in order  
45 that in both directions of movement the seed may be cast from the extremities or points of the ribs.

The center plate and ribs of the wheel are formed of sheet metal and the ribs are bent  
50 up from the center plate, by which construction I am able to secure a smooth joint between the parts, so the seeds may be more easily delivered in the operation of the device, avoiding all rough joints commonly incident  
55 to the soldering of the ribs onto center plates.

In operation a bag is attached to the box or case and is supported by straps from the shoulder of the operator, the machine resting on his hip. It will be understood, however,  
60 that a machine constructed as described might be attached to a wheeled vehicle and the wheel of the latter be suitably geared with the shaft of the distributor-wheel.

Having thus described my invention, what  
65 I claim as new is—

1. In a broadcast sower, a distributing-wheel divided by ribs into a series of receiv-

ing-chambers and having channels connecting said chambers, substantially as set forth.

2. A distributing-wheel having a cast-metal  
70 hub and a sheet-metal body, the latter being provided with ribs dividing it into chambers, and the hub being formed hollow and having openings communicating with the chambers of the body, whereby to form channels between  
75 said chambers, substantially as set forth.

3. In a broadcast sower, a distributing-wheel having a sheet-metal body formed with ribs bent up from said body and formed of double thickness and approximately at right  
80 angles to the body, whereby the wheel may be operatively revolved in both directions, substantially as set forth.

4. In a broadcast sower, a distributing-wheel having its body formed of sheet metal  
85 and in sections, the adjoining edges of said sections being bent to form flanges constituting halves of the rib, the free edge of one flange being bent over that of the other to form a crown for the rib, substantially as set forth.  
90

5. In a broadcast sower, the combination of the framing, the riddles, supports connecting the riddles to the framing, whereby they may be independently oscillated, and devices  
95 whereby to operate said riddles, substantially as set forth.

6. In a broadcast sower, the combination, with the framing and the riddle-plate, of a carrier pivoted thereto, and guides for directing the movement of said carrier longitudi-  
100 nally along the framing, whereby to preserve the location of the pivotal connection of the riddle therewith in line longitudinal to the framing, substantially as set forth.

7. In combination with the riddle and the  
105 carrier connected therewith, a bail-shaped guide, I, a detent constructed to engage the carrier, and having a hook or hooks engaged with bail I and movable along the same, and a clamp whereby to secure said detent in any  
110 desired adjustment.

8. The combination, in a broadcast sower, with a case or framing having a discharge-opening at the juncture of its front side and bottom, of a riddle-plate movable laterally on  
115 the front side of the case and a riddle-plate movable laterally and longitudinally along the rear side of the case, substantially as set forth.

9. In a broadcast sower, the combination of the frame or case provided with a discharge-  
120 opening at the juncture of its front side and bottom, the distributing-wheel, and a riddle-plate connected with the front side of the case and movable laterally, said plate being arranged and movable in a plane approximately  
125 parallel with the axis of the distributing-wheel, substantially as shown and described.

10. The combination, with the drive-shaft and the distributor-wheel, of the arm forming a brace and pivotal support for the drive-  
130 shaft, and having a guard-plate formed integrally with it, all arranged and operating substantially as set forth.

11. The combination of the lower riddle-

plate, guides securing the same so it may be moved longitudinally and laterally, the carrier pivotally connected with said riddle-plate, and a detent constructed to secure said carrier in any desired adjustment, substantially as set forth.

12. The combination of the lower riddle-plate, a detent constructed to secure said carrier in any desired adjustment, and a spring for closing the riddle-plate when the detent is released, substantially as set forth.

13. The combination, with the lower riddle-plate, of the detent constructed to secure said carrier in any desired adjustment, and adjustable, whereby it may be set at different points, and connections between said detent and riddle-plate, substantially as set forth.

14. The combination, with the metallic edge plate having right-angled sections and provided with guides for the base riddle-plate, of the riddle-plates, the drive-shaft having cranks connected with the riddle-plates, and the distributor, substantially as set forth.

15. The combination of the drive-shaft having cranks, the scatterer secured to said shaft, the edge plate having one wing forming a bearing for one riddle-plate and its other wing provided with guides for the other riddle-plate, and the riddle-plates provided with slotted arms engaging the cranks of the drive-shaft, substantially as set forth.

16. In a broadcast sower, substantially as herein described, the drive-shaft having cranks arranged on different radii, combined with the riddle-plates suitably supported, whereby to discharge the material being sown between them, and connections between said plates and the cranks of the drive-shaft, substantially as set forth.

ISRAEL MARION SWANK.

Witnesses:

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