2 Sheets—Sheet 1.

J. S. BOGLE.
Grain Drill.

No. 201,643. **Patented March 26, 1878.**

Fig. 1.

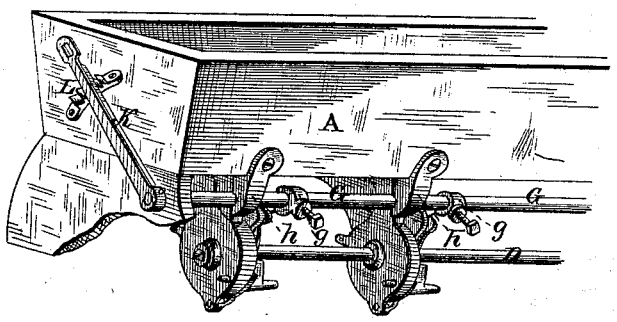


Fig. 2.

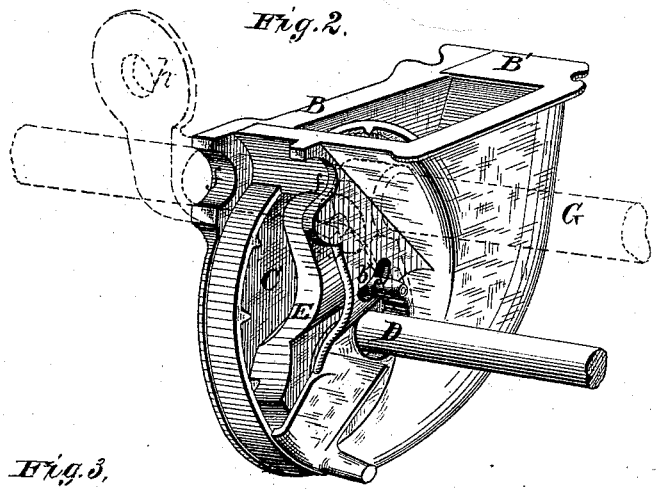
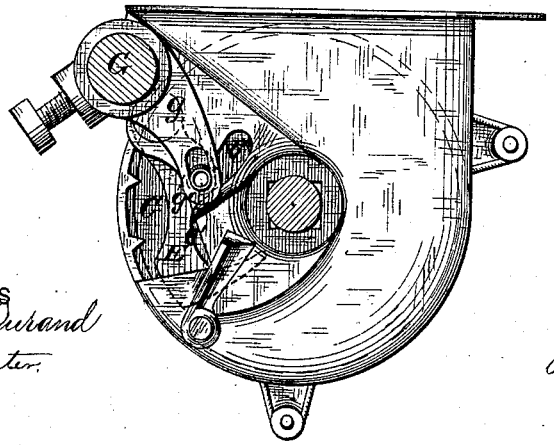


Fig. 3.



WITNESSES
Franck L. Durand
John G. Center.

INVENTOR
James S. Bogle
by A. M. Smith
ATTORNEY

2 Sheets—Sheet 2.

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Grain Drill.

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Fig. 4.

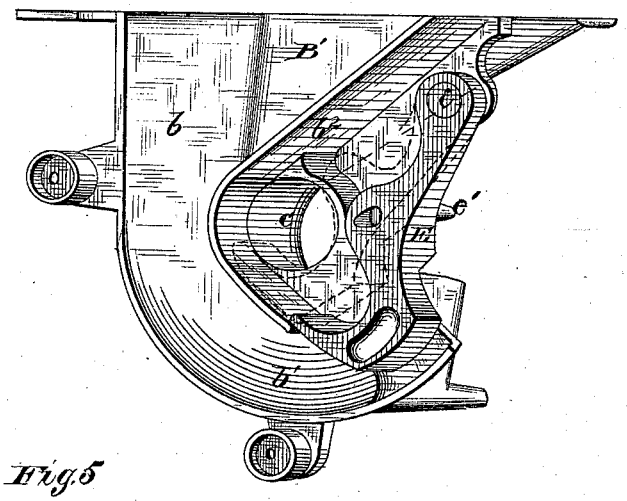
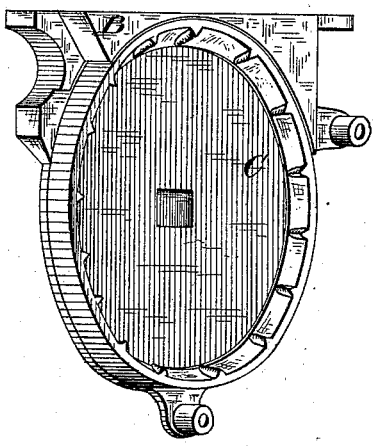


Fig. 5



WITNESSES
Franck L. Durand
John A. Center

INVENTOR
James S. Bogle
by A. M. Smith
ATTORNEY

UNITED STATES PATENT OFFICE.

JAMES S. BOGLE, OF SPRINGFIELD, OHIO.

IMPROVEMENT IN GRAIN-DRILLS.

Specification forming part of Letters Patent No. **201,643**, dated March 26, 1878; application filed October 8, 1877.

To all whom it may concern:

Be it known that I, JAMES S. BOGLE, of Springfield, county of Clarke, State of Ohio, have invented a new and useful Improvement in Grain-Drills, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a perspective view of a portion of the grain-box of a seeding-machine, showing the relation of the distributers thereto. Fig. 2 is a perspective view (enlarged) of one of the distributers detached. Fig. 3 is a side elevation of the same. Fig. 4 is a side elevation of the casing-plate, within and between which and the feed-wheel the measuring-channel is formed, showing the relation of the feed-gage thereto; and Fig. 5 is a perspective view of feed-wheel and one of its casing-plates.

Similar letters of reference denote corresponding parts wherever used.

The invention relates to the manner of pivoting the gages within the casings of the distributing-wheels, and to the means employed for effecting the adjustment of said gages, and will be best understood from the following description with reference to the drawings, in which—

A represents a grain-box or hopper, of any usual or preferred form or construction, and to the bottom of which the distributer-wheel casings are connected, through flanges on the upper open ends, in any usual manner.

B B′ represent the two parts of the divided casing to the distributer-wheels C, the one, B′, adjacent to the flanged side of the wheel having the secondary hopper and seed-channel formed in it, as shown in Figs. 2, 3, and 4. This hopper and channel, starting from the bottom of the grain-box above the distributer-wheel shaft D, extends thence, converging in form, in front of, around, under, and to the rear of said shaft, as shown in Fig. 4 at b b^1, the relation of the shaft or the bearing in the casing therefor being indicated at c. The inner wall of said channel adjacent to the shaft consists of a flange, b^2, which projects laterally from the casing-plate B′ within the flanged feed-wheel C, resting in contact or in close proximity with the vertical disk of said wheel, serving to close the side of the channel adjacent to the distributer-wheel shaft, as shown. The lower end of this flange is supplemented by the swinging end of an adjustable gage, E, which extends upward in rear of the distributer-wheel shaft, and is pivoted within the casing-plates at a point, e, above said shaft, as shown. The foot or swinging end of this gage moves out and in in close proximity with and protected by the lower end of flange b^2, which conforms in shape to the path or movement of the gage, the two extreme positions of which are shown in the full and dotted lines, Fig. 4.

By this arrangement of the gage it will be seen that the discharge or outlet end b^1 of the feed-channel may be enlarged or contracted at will by the adjustment of the gage for regulating the discharge of the grain. The gages thus arranged within the casings are adjusted by means of arms connecting them with a rock-shaft, G, as follows, viz: The rock-shaft extends along the rear lower corner of the grain-box in a line parallel with the distributer-wheel shaft, (see Fig. 1,) and is mounted in half-bearings at f in the casing-plates, being held in place therein by removable half bearing-blocks h, by the aid of which the shaft may be removed and replaced at will. This shaft G has secured to it a number of arms, g, provided with sleeves surrounding the shaft, and with set-screws, by means of which said arm g may be adjusted on the shaft and held at any desired point of adjustment thereon.

The swinging ends of these arms are provided with longitudinal slots g', with which points or spurs e' on the sides of the gages, and passing out through slots at b^x in the casing-plates, engage, connecting the pivoted gages with the vibrating arms g.

These points or spurs e', by preference, are made tapering or conical in form, in such manner that, as the arms g are adjusted on the shaft G toward the gages, the points are made to snugly fill the slots in transverse section, and thus not only prevent any loss of motion between the arms and gages, but also to compensate for wear either in the slot g' or of the spur e'.

By this arrangement of connecting devices the gages can be arranged entirely within the casing-plates within the periphery of the dis-

tributing-wheels, and their pivotal centers being placed above the distributing-wheel shaft, as explained, the foot or gage part is removed as far as practicable from the pivotal center under such arrangement, thereby making its movements less abrupt, and serving as nearly as practicable to preserve the discharging-outlet of the channel from material change of form under the different adjustments of the gage—a matter of considerable importance in maintaining a uniform action upon and in preventing the wedging and crushing of the grain.

The pin or spur *e'*, instead of being formed on the gage, may be formed on or applied to the arm *g*, and the slot may be formed in the gage at a point intermediate between its pivot and its gaging end or foot, either arrangement serving to connect the adjustable gages arranged within the casings directly with vibrating arms on a single rock-shaft arranged without the periphery of the feed-wheels, thus simplifying the mechanism required for adjusting the gages, and at the same time obviating all loss of motion between the parts, as explained.

In some cases it may be found sufficient to use straight cylindrical spurs; but the tapering or conical form is preferred for the reasons stated.

The shaft G is provided at one end, or at any convenient point in its length, with a lever, K, extending upward within reach of the driver, and moving over a graduated rack and sector-plate, L, by means of which the lever and the gages, through their connection with said lever, as described, may be held at any desired point of adjustment, suitable marks on said plate serving to indicate the position of the gages and the quantity sown per acre.

The manner of setting the gages uniformly is the same as that described in a former application filed July 19, 1877, consisting in providing the distributer-wheels with annular ledges, upon which the gages are allowed to drop or rest, and the actuating-arms *g* are then adjusted uniformly on the shaft, to conform to the described position of the gages, and to engage therewith when being fastened to the shaft by their respective set-screws. Any movement of the shaft will be imparted uniformly to the gages throughout its entire length.

The machine, except in the details particularly pointed out, may be constructed and may have its parts arranged in any usual or preferred way, and need not therefore be further described.

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

1. In a grain-drill, a gage pivoted within and to the distributer-wheel casing, and operated by means of a slotted arm connecting it with a rock-shaft arranged without the periphery of the feed-wheel.

2. A gage pivoted within and to the casing of the distributer-wheel at a point above the driving-shaft bearing, and operated by means of a slotted arm and rock-shaft, substantially as described.

3. The pivoted gage provided with a tapering stud or pin, engaging with a slotted actuating-arm for obviating loss of motion between said parts, as described.

4. The combination of a series of pivoted gages E and adjustable actuating-arms *g*, arranged and operating substantially as described.

5. The rock-shaft G, provided with the adjustable arms for actuating the separately-pivoted gages, mounted in open bearings in the casing-plates, in combination with the removable hangers or half-boxes *h*, attached to the seed-box, substantially as and for the purpose set forth.

In testimony whereof I have hereunto set my hand this 29th day of September, A. D. 1877.

JAMES S. BOGLE.

Witnesses:
ROBT. C. RODGERS,
J. W. FREY.