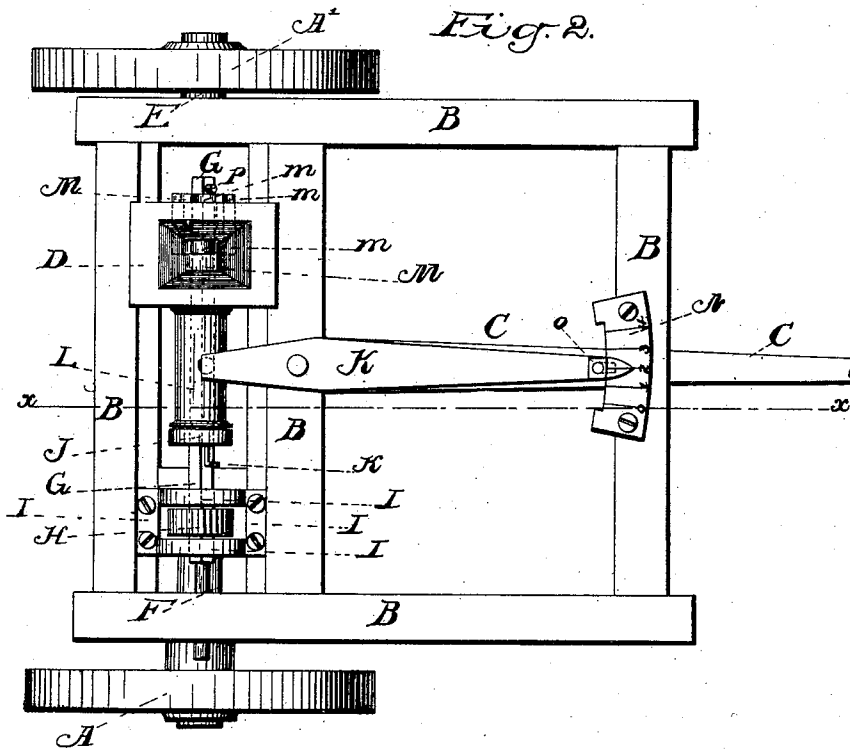
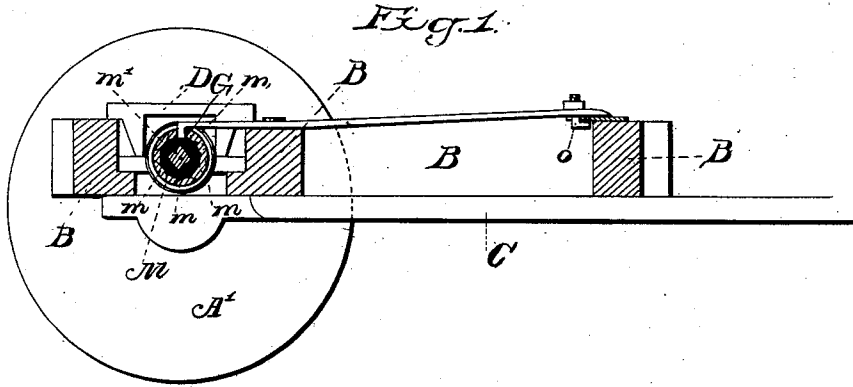


M. F. LOWTH & T. J. HOWE.

Grain Drill.

No. 82,853.

Patented Oct. 6, 1868.



Witnesses:

L. A. Pettit
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M. F. LOWTH AND THOMAS J. HOWE, OF OWATONNA, MINNESOTA.

Letters Patent No. 82,853, dated October 6, 1868.

IMPROVEMENT IN GRAIN-DRILLS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that we, M. F. LOWTH and THOMAS J. HOWE, of Owatonna, in the county of Steele, and State of Minnesota, have invented a new and useful Improvement in Grain-Drills; and we do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a longitudinal vertical section.

Figure 2 is a top view.

This invention has for its object to furnish a simple, cheap, and durable apparatus for regulating the feed of grain-drills, so that they can be adjusted to feed one, two, three, four, &c., bushels to the acre, and so constructed and operating that the device can be perfectly regulated, and, when necessary, its parts can be taken apart and put together again without difficulty, in the field or elsewhere.

In the drawings, A A' are the draught-wheels; B, the frame; C, the draught-pole; and D, the lower portion of the seed-box or hopper. The wheels run on short axles, E F; the former, E, being simply a fixed or dead-spindle, projecting from the "near" side of the frame, and bearing the wheel A, which runs loosely upon it; the latter, F, being a rotating axle fixed to the wheel A, and extending in nearly to the centre of the machine. G is a square shaft, extending across within the limits of the frame B, one end of it being above, and the whole parallel to the axle F. The shaft is so hung in its bearings, that it can be slid longitudinally to the right or left. When the drill is in operation, the shaft is caused to revolve by means of a pinion, H, through which it passes, and which receives and communicates motion from a spur-wheel attached to the axle F, under it. I is simply a slotted plate, which prevents the pinion H from changing its position, as the shaft is moved back and forth.

J is a removable bearing, capable of being slid upon the shaft G, and fixed in any required position, by means of a key, k. It is cylindrical in shape, and is provided at one end with a circular disk or head. Its object is to furnish a smooth bearing-surface for the sleeve L to run upon. The latter is a spool-shaped hollow cylinder, fitting loosely upon the bearing J, and capable of being slid longitudinally upon said bearing, by means of a lever, K. M is another cylinder, through which the shaft G extends, and which, like the parts J and H, is capable of sliding lengthwise upon the shaft, independently of the latter, but is not capable of rotating independently of it. In its outer surface, which closely fits under the hopper D, forming the bottom of the latter, a series of longitudinal grooves or depressions, m m, is cut, which receive the seed from the hopper, and distribute it along the drill or furrow at the proper intervals. The depressions are of such a length, and the shaft G, with the cylinder M upon it, is capable of sliding back and forth to such a degree, that the whole extent of the depressions can be brought under the mouth of the hopper, so as to feed very fast, or can be entirely removed from under such mouth, so as not to feed at all.

The several parts being thus constructed, to put them together for practical operation, we remove the hopper, put the pinion H in its place in the slot of plate I, and pass the right-hand end of shaft G through it. We then slip the bearing J upon the shaft, and the sleeve L upon the bearing. After this, we slide the cylinder M on, in the same manner, and fasten it upon the shaft by means of a pin, p, nut and washer, or other equivalent. The sleeve L, and its bearing J, are then to be slid along towards the cylinder M, till they bear against it lightly, and are to be confined in that position by the key k, as before explained. The lever K is then to be attached, as shown in the drawings, its rear end being bent down and entering a hole drilled for the purpose in the sleeve. The forward end of the lever rests upon a graduated plate, N, fixed to the frame, and on which the lever points to the number of bushels, &c., per acre that the drill is feeding. The lever can be fastened in any required position, by means of a clamp, o, attached to its end by a set-screw, and operating against the under side of the graduated plate.

The shaft G may be made square, triangular, or in any other shape that will admit of its holding firmly the parts H, J, and M, so as to rotate them with itself, while yet allowing them to be slid along longitudinally upon

it. From what has already been said, it will be understood, by a glance at the drawings, that by moving the forward end of the lever back and forth over the figures 1, 2, 3, &c., on the plate N, the shaft G, with the parts J, L, and M, will be moved longitudinally, so as to bring the depressions *m m* under the hopper to any required extent, whereby the feed can be perfectly adjusted and controlled.

The whole mechanism is exceedingly simple, strong, cheap, and durable. Each part can be cast so that, with but little finishing, all will go together ready for practical operation in the field.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The device, consisting essentially of the shaft G, pinion H, bearing J, sleeve L, and cylinder M, having the grooves *m m*, when constructed and operating together, as described, and in connection with a driving-shaft, F, seed-hopper D, and a lever, K, for moving the shaft back and forth, substantially as described.

2. The combination of the graduated plate N, index-lever K, and clamp *o*, for confining the lever at any point of the plate, when employed in connection with the apparatus above described, and for the purpose set forth.

To the above specification of our invention we have signed our hands, this seventh day of August, 1868.

M. F. LOWTH.
THOS. J. HOWE.

Witnesses:

ISAAC HOWE,
LEWIS L. WHEELLOCK.