C. E. PATRIC.

GRAIN-DRILL.

No. 189,383. Patented April 10, 1877.

Fig. 1.

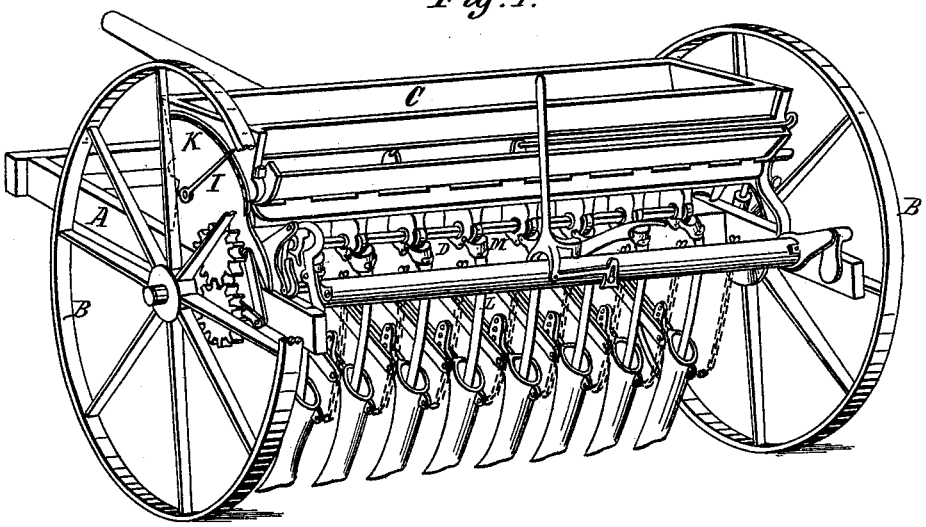


Fig. 2.

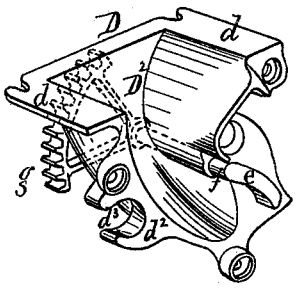


Fig. 3

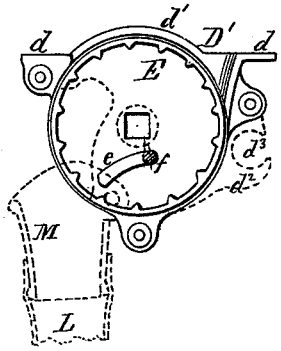


Fig. 4.

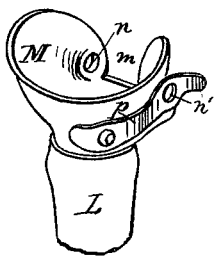
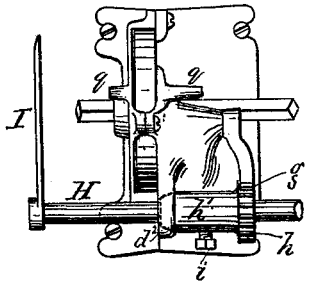


Fig. 5.



Attest:
Alexander Mahon.
John G. Center.

Inventor.
Charles E. Patric
by A. M. Smith, atty.

UNITED STATES PATENT OFFICE.

CHARLES E. PATRIC, OF SPRINGFIELD, OHIO.

IMPROVEMENT IN GRAIN-DRILLS.

Specification forming part of Letters Patent No. **189,383**, dated April 10, 1877; application filed October 30, 1876.

To all whom it may concern:

Be it known that I, CHARLES E. PATRIC, of Springfield, county of Clarke, State of Ohio, have invented certain new and useful Improvements 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 grain-drill having my improvements applied, showing the general arrangement of the parts of the machine. Fig. 2 is a perspective view (enlarged) of one side or part of the divided distributer-wheel casing, taken from the inner side, and showing the arrangement of the seed-gage, &c. Fig. 3 is a side elevation of the other half of the distributer-wheel casing, with the wheel in position, and showing the relation of the gage and its adjusting-shaft thereto. Fig. 4 is a perspective view of the swiveling funnel which connects the seed tubes or spouts with the distributer-wheel casing, and Fig. 5 is a bottom view of one of the distributers.

Similar letters of reference denote corresponding parts wherever used.

The invention consists in a novel means for effecting the adjustment of the feed-gages arranged within the channels of the vertical distributing-wheels.

The invention further consists in a novel means for connecting the swiveling funnels, through which the grain is fed into the conductor-spouts, with the distributer-wheel casings, whereby they are adapted to be readily removed or applied, as hereinafter described.

In the accompanying drawings, A represents the frame of the machine; B B, the driving and carrying wheels, and C the grain-box, which parts, with their several attachments, together with the general organization of the machine, except in particulars hereinafter specified, being similar to machines now in general use, need not be further described. D D^1 represent the two parts of the divided distributer-wheel casing, provided at their upper ends with horizontal flanges *d*, adapting them to be attached to the bottom of the grain-box C, in the usual manner, bringing the hopper portion D^2 directly under the opening in the bottom of the grain-box. The part D^1, Fig. 3, has a hood or arched portion, d^1, extended between its flanges *d*, conforming in curve to, and slightly overhanging, the periphery of the distributer-wheel E, but leaving the greater portion of said periphery exposed, for the purpose explained.

Where a double distributing-wheel is employed, or one having feed-channels upon both its sides, adapting it to different kinds of grain, as is sometimes done, the arched portion d^1 may be located directly over the central disk, leaving both flanges of the wheel exposed; or it may be dispensed with, and the arch covering the flange or side of the wheel not in use for discharging the grain may be formed in the slide on the bottom of the hopper or grain-box.

By the construction and arrangement described, the upper portions of the distributer-wheels are projected up above the casing-flanges *d*, and through the openings in the hopper-bottom, in such manner as to move in contact with the grain in the hopper, serving thereby to agitate the grain and to prevent it from arching and lodging over said opening, as explained.

Within the measuring-channel formed between the casing-plates and the flanged side of the distributer-wheel, is located a pivoted plate or gage, *e*, similar to that described in my patent of January 26, 1875, said plate or gage being attached at its inner end to a rock-shaft, *f*, which has its bearing in, and extends through, the casing D, as shown, and has a toothed segment, *g*, made fast to its outer end, by means of which the relation of the gage to the flange of the distributer-wheel and the size of the measuring-channel is adjusted.

For effecting the simultaneous and uniform adjustment of all the gages, a rock-shaft, H, is employed, extending transversely of the machine, and mounted in any suitable bearings thereon.

Upon this shaft is mounted a number of pinions, *h*, corresponding with the number of distributers employed, each provided with an elongated hub or sleeve, *h'*, through which, by means of a set-screw, *i*, the pinion is set and held in the required relation to the shaft H. The casing-plates are provided with flanges d^2, hav-

ing bearing-sockets d^3, in which the tapering ends of the hubs or sleeves h' rest when the pinions h are in position to engage with the segments g, as shown in Fig. 5. The bearing-flanges d^2 are cut away on their outer edge in front of the sockets d^3, to permit the independent removal and replacing of the distributers and casings when required, the shaft H passing readily through the opening thus formed after the sleeve h' has been first withdrawn laterally from the bearing-socket.

By this arrangement the sockets d^3 may be made to also support the rock-shaft H without the aid of separate bearing-brackets. The shaft H has an index-lever, I, rigidly connected with it at one end, by means of which said shaft and the several pinions, segments, and gages connected therewith, as explained, are simultaneously adjusted, and through which, also, in connection with a dial at K, the position of the several gages and the amount sown per acre are indicated. For setting the gages in uniform relation to their respective distributer-wheels a gage or templet is employed, made in the form of a segment, the curve of the outer face of which conforms to that of the inner face of the flange of the wheel, with notches cut in it to fit the teeth or "starts" on said flange. This templet (not shown) is placed in the channel, and the gage swung down so as to rest upon it, after which the pinion h on shaft H is moved laterally into engagement with the segment g, with its sleeve in the bearing-bracket d^2, and there secured by the set-screw i to the shaft, this operation being repeated with each of the several gages, and giving them the desired exact and uniform relation to their respective distributing-wheels, after which their uniform adjustment is effected, as desired, through the segments g, pinions h, shaft H, and index-lever I, as explained. By this arrangement the adjustment of the gages and the quantity of grain to be sown per acre may be regulated with entire precision. The conductor-spouts L, through which the grain is conveyed from the distributers to the hoes or drill-teeth, are connected with the casing-plates D D^1 by means of funnels M, (see Fig. 4,) notched or slotted at their upper larger ends at m, adapting them to clasp the casing-plate and wheel.

At one side of this slot or notch m is an eye or perforation, n, and upon the other side a slot is formed, covered by a flat spring, p, perforated at n', adapting the funnel M to be coupled to the casing-plates through laterally-projecting spurs $q\ q$ formed thereon, as shown in Fig. 5.

The funnel is applied by engaging the eye n with one of the spurs q, when, by swinging the funnel around, the other spur enters the slot covered by spring p, forcing the latter outward until the eye or perforation n' coincides therewith and allows the spring to be retracted, engaging it with said spur. This manner of attaching the spouts, while it holds them firmly connected with the distributers, allows them to be swung or vibrated longitudinally to accommodate the position of the hoes, whether in the same or in different transverse planes, while the employment of the spring p, as explained, permits the ready removal and replacement of the funnels and conductors when required.

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

1. The gages e, arranged within the measuring-channels of the distributing-wheels, in combination with the rock-shafts f H, segments g, and pinions h, arranged and operating substantially as described.

2. The slotted or open bearing-brackets d^2, in combination with the sliding pinions h, adapting the distributers to be independently removed and replaced, as described.

3. The distributer-wheel casing D D′, provided with the spurs $q\ q$, in combination with the funnel M, provided with the eye n and perforated spring p, arranged and operating substantially as described.

CHARLES E. PATRIC.

Witnesses:
A. P. LINN COCHRAN,
ROBT. C. RODGERS.