2 Sheets—Sheet 1.

P. H. CAVANAUGH.

GRAIN OR SEED-DRILLS.

No. 187,455. Patented Feb. 20, 1877.

Fig. 1.

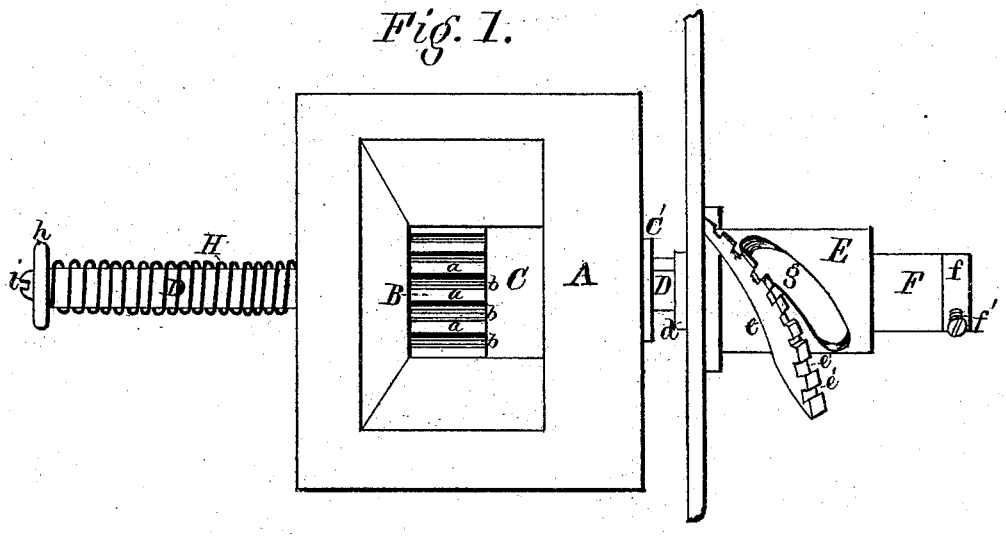
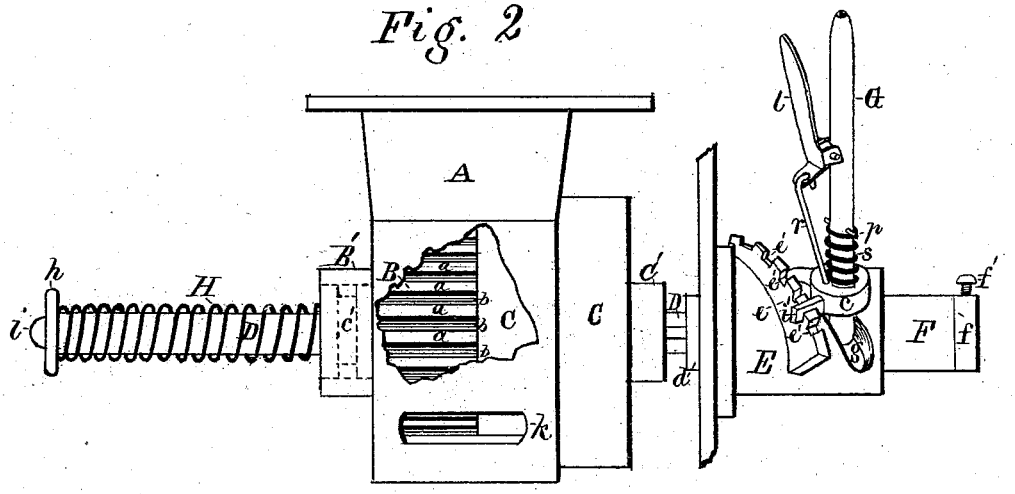


Fig. 2



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2 Sheets—Sheet 2.

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Fig. 3.

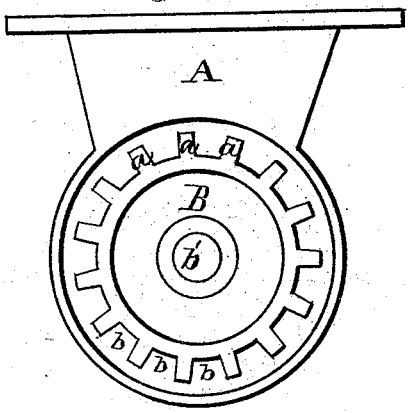


Fig. 4.

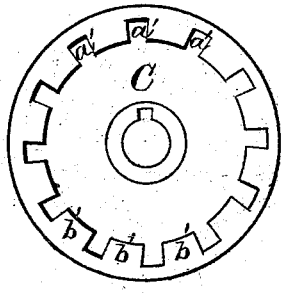
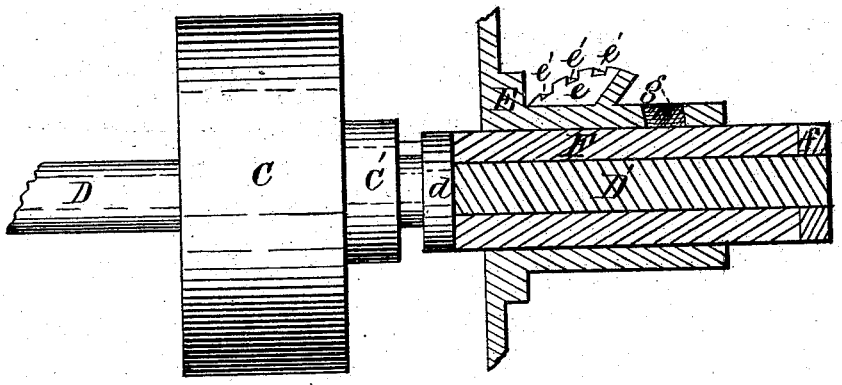


Fig. 5.



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UNITED STATES PATENT OFFICE.

PATRICK H. CAVANAUGH, OF SPRINGFIELD, OHIO.

IMPROVEMENT IN GRAIN OR SEED DRILLS.

Specification forming part of Letters Patent No. **187,455**, dated February 20, 1877; application filed August 18, 1876.

To all whom it may concern:

Be it known that I, PATRICK H. CAVANAUGH, of the city of Springfield, county of Clarke, and State of Ohio, have invented certain new and useful Improvements in Grain or Seed Drills, of which the following is a specification:

My invention relates to the construction of the seed-distributers, their shell, and the operative parts for regulating and adjusting the same, for sowing any desired quantity.

The object of my invention is to provide a seed-drill with perfect adjustment of its distributers, so as to be readily gaged to sow from the smallest to the largest quantity, which shall be incapable of clogging, and which is not affected when operated upon inclined ground.

I dispense with any additional gear for changing the quantity sowed, simply using a peculiar movement for operating the distributers to regulate the amount of their discharge.

Two sheets of drawings accompany this specification—Sheet 1, with Figs. 1 and 2; Sheet 2, with Figs. 3, 4, and 5.

Figure 1 is a plan view of my improved seed-distributer with its cup or shell and all the operative parts except the hand-lever. Fig. 2 is a side (rear) elevation of the same with the hand-lever and its latch for regulating the quantity of seed sown. Fig. 3 is a view of the inside of the cup with the male distributer-wheel in position therein. Fig. 4 is an end view of the female distributer-wheel detached from its shaft. Fig. 5 is a side elevation of the same on its shaft, with the operative parts connected with its adjustment in longitudinal section.

A is the cup or shell of my improved seed-drill. Its hopper part is of square or rectangular form, and its lower portion consists of a short section of a cylinder, open at one end the full width of its inside diameter. In Figs. 1 and 2 the open end is at the right. A male distributer-wheel, with its teeth cut like the cogs in an ordinary pinion, is seen in Figs. 1 and 2, marked B. This wheel has a hub on the left end, which enters a stationary collar, B′, cast on the closed end of the cup A. It is secured to the cup by a set-screw, which enters the groove *c′*, cut in its hub, which allows it to turn within the collar when operated.

The position of B can be readily understood by reference to Fig. 3, as it is when ready for the reception of the other section of the distributer.

a a are the cogs; *b b*, spaces. C is the female part of the distributer. It is in the form of the end section of a closed cylinder, with internal grooves cut to exactly fit over the teeth *a a* of the wheel B, its projecting ribs *b′* snugly fitting into the spaces *b* when the two are telescoped together. The part C has also an outside hub, C′, by which it is keyed fast to the shaft D. The shaft is then inserted through the hole *b′* (see Fig. 3) in B, and the two parts of the distributer are interlocked together. The spiral spring H, Figs. 1 and 2, is slipped on the outer end of shaft D, on which the series of distributers are operated, and is held by a collar or button, *h*, and screw *i*, inserted in the end. The right section of shaft D has a collar, *d*, turned on it, and outside of this, extending to its end, it is turned down smaller to receive the pipe-section F. This is bored out so as to allow the small end D′ of shaft D to turn freely in it. F is held in its place by a loose collar, *f*, which is slipped on the end of D′, which projects beyond it, and fastened thereto by a set-screw, *f′*.

Over the pipe F is slipped a sleeve, E. This may be cast in one piece with the end plate, or they may be made in two pieces and bolted together. The sleeve E has cast upon it a spiral-toothed rack, *e*, with teeth *e′* cut in it for catching a projecting stud, *i′*, on the collar *c* of the hand-lever G, when operated by its latch-lever *l*. (See Fig. 2.) This hand-lever enters through a spiral slot, *g*, (in E,) into the pipe F, partially rotating the latter as it is operated back and forth in the slot to give the shaft an end movement in opening and closing the distributers to regulate the discharge of grain. The collar *c* is loose on hand-lever G, and is connected with the latch-lever *l* by a rod, *r*. Its locking-stud *i′* is held in the notches *e′ e′* of the rack *e* by a spiral spring, *s*, and its pin *p*. When the hand-lever G is pushed toward the left end of slot *g*, shaft D is thrust to the left, and the female section C

of the distributer (being rigidly secured thereto) is also slipped to the left over the male section B, thus shortening the length of its receiving grooves or spaces, and lessening the amount of grain discharged from the orifice *k*, as shown in Figs. 1 and 2. The spiral spring H on the outer end of shaft D operates to take up any lost motion and to close the distributers in case the latch of hand-lever G should be raised accidentally. It also operates to relieve any pressure or wear in operating the hand-lever.

It will be noticed that my seed-drill consists, primarily, of the two operative parts (and their attachments) B and C, the former being loosely connected to the shell or cup A, so as to rotate therein, but prevented from disconnection, and the latter being rigidly attached to shaft D, with its device for operating the adjustment of the two.

A registering-scale can be attached in the usual manner, with an indicator, or the figures can be put on the rack *e*.

The outer face of C, as it turns, operates to keep the seed stirred in that part of the cup, rendering the discharge easy and regular, whether in large or small quantities. Any number of distributers desired can be operated upon a single shaft. The male distributer B is cast hollow to lighten it. The outer or female section C may be cast with either a solid or partially open back end. Its ribs and grooves should correspond in length with the teeth and spaces in the male section B, so that when the two are closed together its right or rear end will present an even surface with the edge of the cylindrical portion of cup A.

Having thus described my invention, I claim as my improvement—

In combination with the shaft D, seed-cup A, distributer-sections B and C, and the device for operating said shaft, and the female section C by an end movement, in the manner specified, the spiral spring H, with its retaining cap or button *h* and screw *i*, for the purpose of taking up any lost motion, lessening the wear, and closing the distributers in case the locking-latch for holding them in adjustment should be accidentally released from its notch in rack *e*, as hereinbefore set forth.

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