2 Sheets—Sheet 1.

L. POOLE.

GRAIN REGISTER.

No. 186,614. Patented Jan. 23, 1877.

Fig. 1.

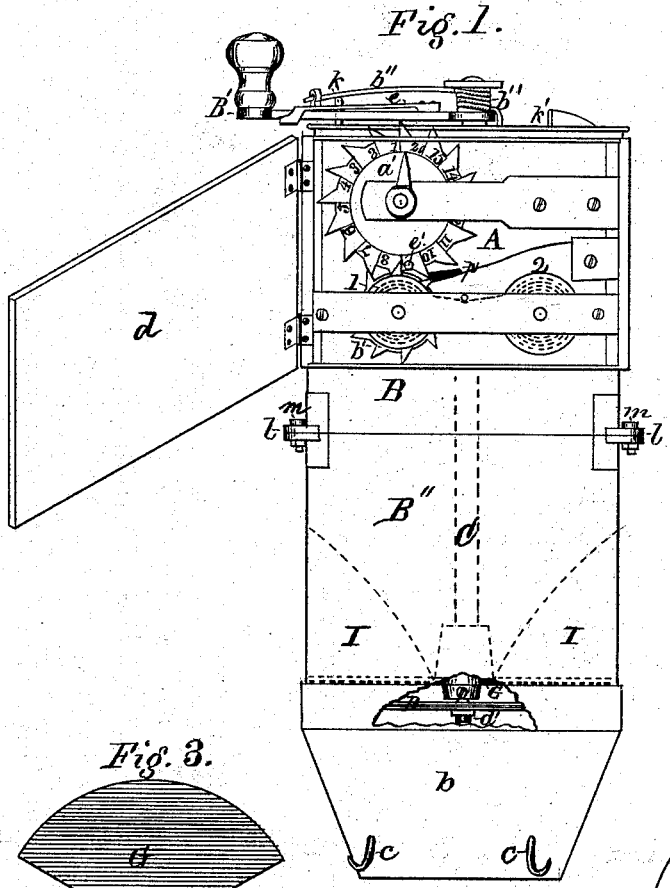


Fig. 4.

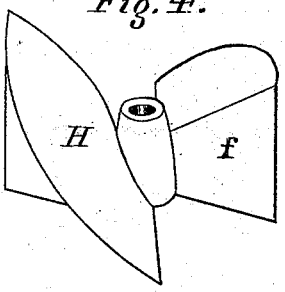


Fig. 3.

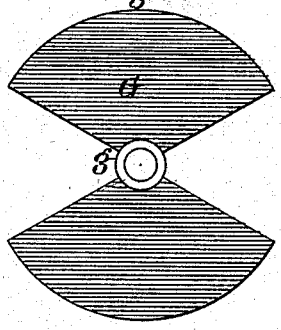


Fig. 5.

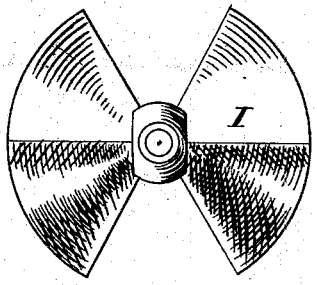
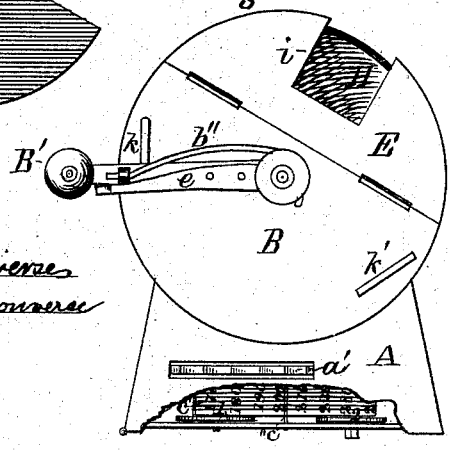


Fig. 2.



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B. D. Converse
M. M. Converse

Inventor
Lemon Poole.

2 Sheets—Sheet 2.

L. POOLE.

GRAIN REGISTER.

No. 186,614. Patented Jan. 23, 1877.

Fig. 6.

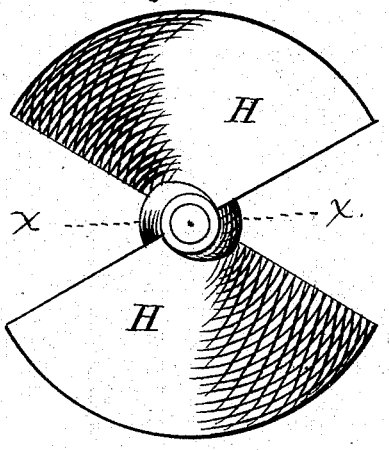


Fig. 7.

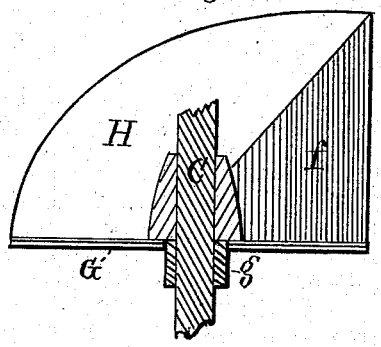


Fig. 8.

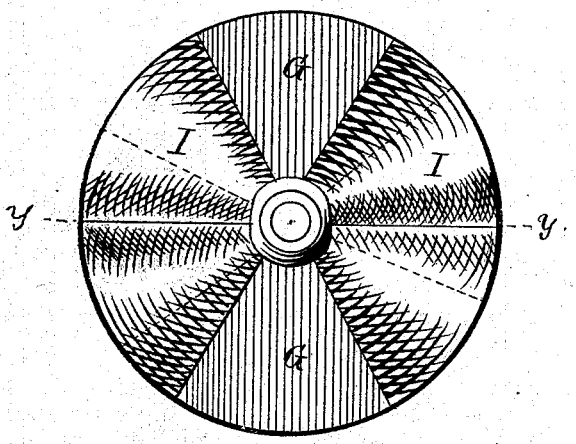
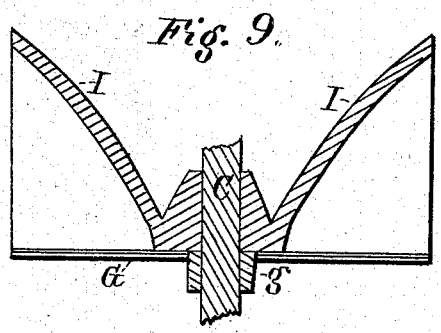


Fig. 9.



Attest.
M. M. Converse.
L. T. Davis.

Inventor.
Lemon Poole,
By B. C. Converse, Atty.

UNITED STATES PATENT OFFICE.

LEMON POOLE, OF SPRINGFIELD, OHIO, ASSIGNOR OF ONE-HALF HIS RIGHT TO HOLLIS C. TROUT, OF SAME PLACE.

IMPROVEMENT IN GRAIN-REGISTERS.

Specification forming part of Letters Patent No. **186,614**, dated January 23, 1877; application filed June 29, 1876.

To all whom it may concern:

Be it known that I, LEMON POOLE, of the city of Springfield, county of Clarke, and State of Ohio, have invented a new and useful Improvement in Grain Measures and Registers, which improvement is fully set forth in the following specification, reference being had to the drawings accompanying this specification.

The object of my invention is to measure with accuracy and register correctly all the grain which may be thrashed and delivered from a separator, with less labor and time than can be done by any registers now in use; also, to furnish for this purpose a combined measure and register which is simple and durable, and which can be either attached directly to the machine, or operated independently of it, receiving its grain from connecting conveyers.

Figure 1 is a front elevation of my measure and register. Fig. 2 is a top view of the same. Fig. 3 is a plan view of one pair of the valves. Fig. 4 is a perspective view of the upper pair of cut-offs. Fig. 5 is a plan view of the lower pair of cut-offs. Fig. 6 gives a plan view of the upper cut-off H and valve G open. Fig. 7 is a vertical half-section of same, with the valve G under it, showing the relative position of the two, given through line *x x*. A section of shaft C is also shown. Fig. 8 is a plan view of the lower cut-off I and its valve G, the latter being closed. The dotted radial lines indicate the edges of the valve. Fig. 9 is a vertical section through the upper angle of cut-off I, as shown by line *y y*, and the valve G below it; also, a section of shaft C, as in Fig. 7.

Both the cut-offs are cast hollow. The valve of each is similar.

A is the register, which is shown with its door open, to show the interior mechanism. B is the cylinder, for receiving and measuring the grain. To the front of its upper end is attached the register A. The cylinder is made of sheet metal, and, for convenience of access to its interior parts, is made in two sections, which are held together by projecting lugs, and bolts and nuts. A conical cap, *b*, is slipped on the lower end, for contracting the discharge of grain. This is provided with hooks *c c*, for attaching the mouth of a sack to receive the measured grain. The cylinder B is shown with a section broken out, to show its interior.

A vertical shaft, C, extends through the center of the cylinder B, its lower end being pivoted upon the point of an adjustable screw, *d'*, which is inserted up through the middle of the bridge-tree D. The upper end of the shaft projects above the top of B, so as to give room for the crank-lever B' and its coiled spring *b''*. The shaft turns in a cross-piece under the top plate E.

Two pairs of valves, G, Fig. 3, are mounted upon the shaft. These valves are of thin metal, in the form of a flat disk, with one-sixth part cut out on each side of the collar *g*. They are nicely fitted to the inside of the cylinder, and are placed at such a distance apart as to give the exact measure of one-half a bushel in the space between them. To enable them to discharge quickly when opened, they are provided with raised cut-offs H and I, Figs. 4 and 5, of peculiar form. H is made something like the screw of a propeller, but having the upper angle of its blade carried down vertically. The object of this is to allow of the attachment of a flat brush in case the wear of the cut-off and valve renders this necessary, as the upper cut-off and valve are subjected to much the greatest wear. *f* is the straight side, which forms the face of the upper cut-off. The lower one, I, is constructed with inclined sides, decreasing toward the center of the cylinder. These cut-offs are also in pairs, with a middle collar, and are made of thin cast metal. I has its sides highest next the inner wall of the cylinder, and they slope from a central rib or angle down to the edge of the holes formed by the opening of the valves, so as to facilitate the discharge of the grain lying on them. This cut-off is also seen in dotted lines, Fig. 1. Each pair of cut-offs are of the same area at the base as the surface of the valves, being equal to two-thirds of the area of a cross-section of cylinder B, leaving one-third for the two openings in each.

The valves are secured to the shaft by set-screws. They are at right angles, or nearly so, with each other, and the cut-offs are placed in the same manner, so as to allow of their

openings being coincident with each other in opening. The register A is constructed with a large dial-wheel, a', with teeth of ratchet-shape. Below this are fastened two spools, which carry a tape, c', wound upon them, on which is numbered the bushels of grain measured. The great wheel a' has a pin, e', projecting from its side, which strikes a tooth of wheel b' on the inner end of spool 1 below it at every revolution. A small wire, c'', extends across the top of the tape to indicate the figures to be counted. The tape is drawn to the left, rolling up on spool 1, and unrolling from off spool 2. At each revolution of the dial-wheel a' the tape c' moves the distance of one space between its figures. The teeth of the dial-wheel project through a slot in the top of the register-box just far enough to allow the end of the flat spring e to catch one tooth and turn it one space when the crank-lever B′ (which carries this spring) is operated from left to right. The spring e is riveted at its back end on the top of lever B′, and its forward end is bent down below it to allow it to strike the tooth of wheel a' at each movement. The crank-lever B′ is turned from stop k till it reaches stop k', when the grain is discharged through the valve-openings from the measure part of B, and the figures on wheel a' indicate the tally. The coiled spring b', which is wound around the upper end of shaft C, is extended out along lever B′ through an eye-bolt near its handle. It throws the lever back to stop k after each tallying movement.

The tape c' may be long enough to mark one thousand bushels, or even more, if required. The shaft of spool 2 projects beyond its frame, and is squared, so as to allow of the tape being rewound on it by the use of a key. A spring-pawl, p, holds the dial-wheel a' after each movement. One side of the top of B is hinged to the other part so as to form a lid. A square hole, i, is seen in it, Fig. 2, through which the spout of the elevator or conveyer discharges its grain into the cylinder from the separator. The space above the upper valve may contain more than a half-bushel, but the space between the upper and lower valves is intended to contain exactly this quantity.

In operating my device care is taken to allow the cylinder to fill before moving lever B′. It is then thrown to the right (spring e moving wheel a' as before described) till arrested by stop k' closing the upper valve and cutting off from the middle or measure part B″ any grain that may be above it, and at the same time that the upper valve is closed the lower one opens, so as to discharge the grain measured. l l are lugs which extend out from the cylinder at the junction of the upper and lower sections. They are fastened together by bolts and nuts m m.

A lock may secure the door d, so as to prevent the register from being tampered with when used. The valves can be easily adjusted to their cut-offs by means of the screw d', which raises and lowers the shaft C, so as to tighten or loosen them. This screw is provided with a jam-nut below the bridge-tree D to secure it in place.

I claim as my improvement—

1. In a grain measure and register, the cylinder B, with its conical cap b, shaft C, valves G, cut-offs H I, bridge-tree D, adjustable screw d', crank-lever B′, with its coiled spring b'', and the stops k and k', as and for the purpose hereinbefore set forth.

2. The registering device A, consisting of dial-wheel a', pawl p, wheel b', spools 1 and 2, tape c', and wire c'', arranged as shown and described, substantially as and for the purpose set forth.

3. In combination with the measuring-cylinder B and its parts specified, the grain-register A, and the intermediate spring e, which operates the latter by the movement of the crank-lever B′ in measuring the grain, substantially as shown and specified, for the purpose hereinbefore set forth.

LEMON POOLE.

Attest:

B. C. CONVERSE,

M. M. CONVERSE.