(No Model.) 2 Sheets—Sheet 1.

W. VANDERVEER.

AUTOMATIC GRAIN WEIGHER.

No. 342,402. Patented May 25, 1886.

Fig. 1.

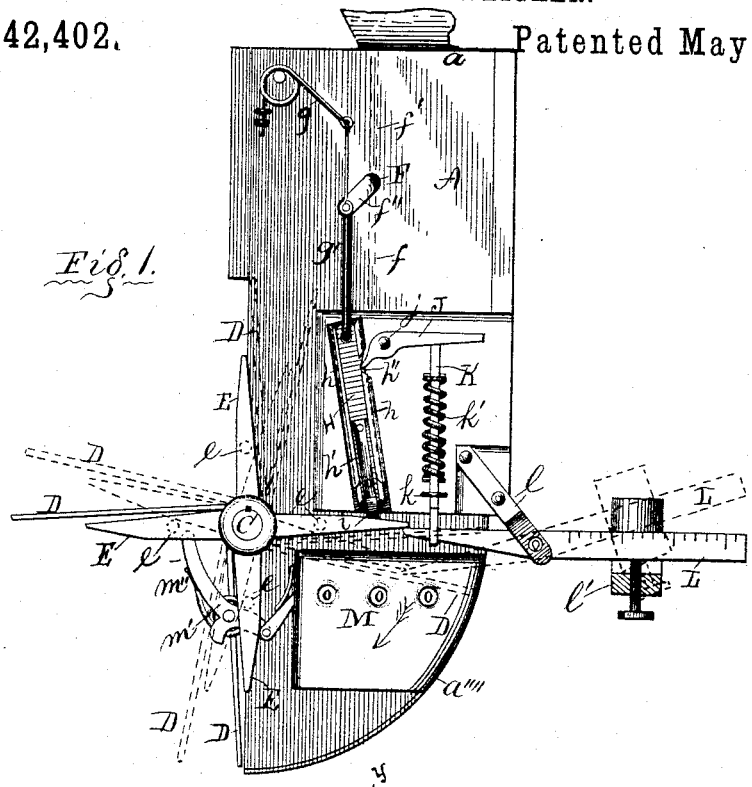
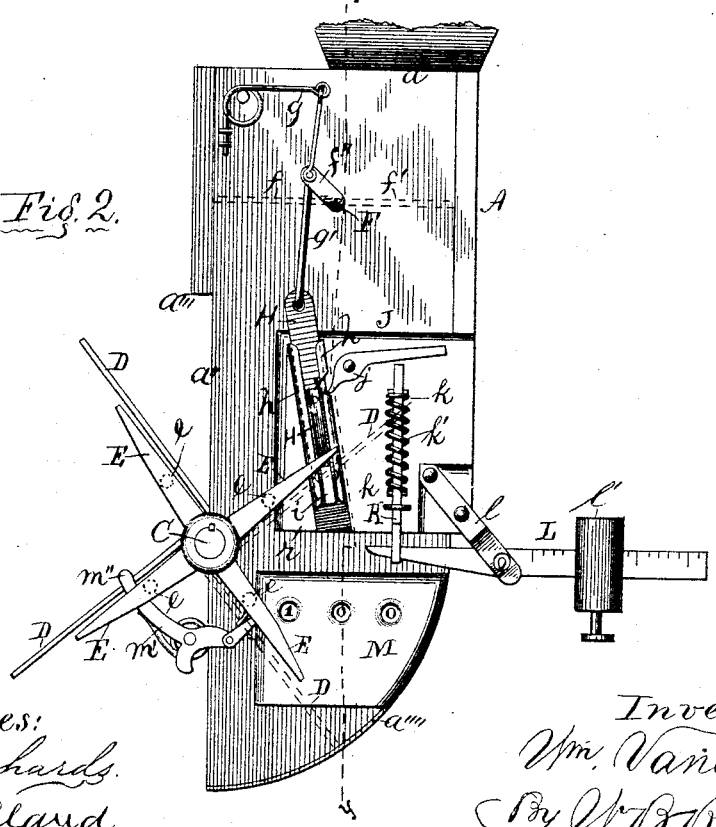


Fig. 2.



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(No Model.) 2 Sheets—Sheet 2.

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Fig. 3.

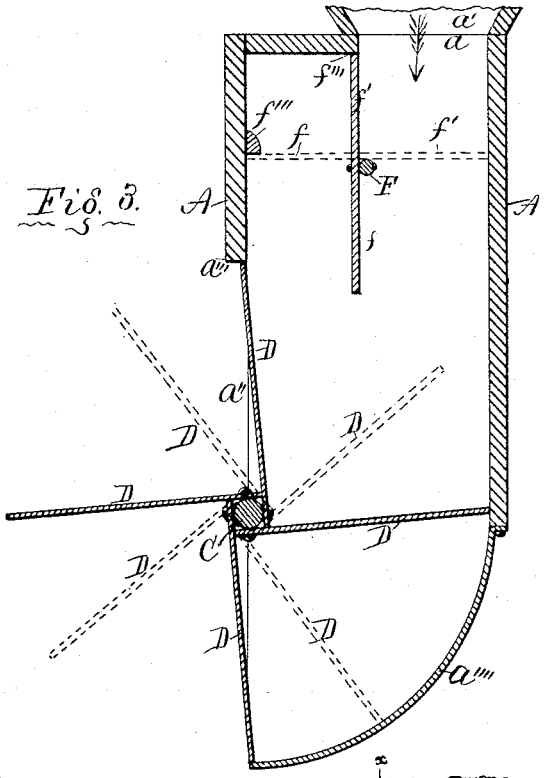
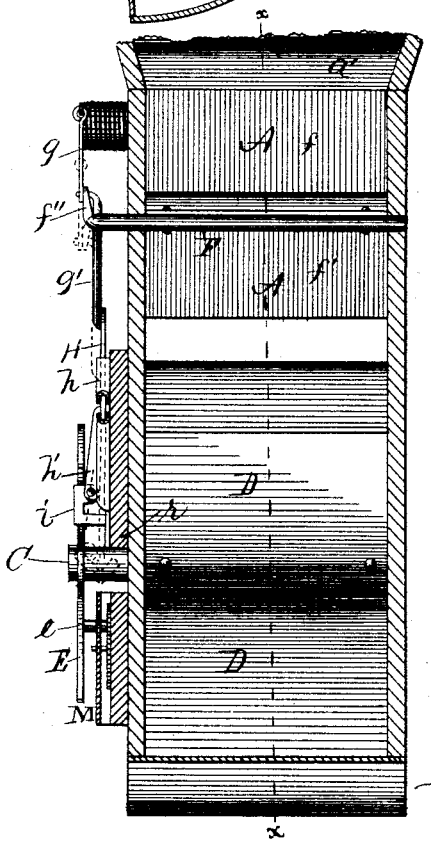


Fig. 4.



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UNITED STATES PATENT OFFICE.

WILLIAM VANDERVEER, OF BUSHNELL, ILLINOIS.

AUTOMATIC GRAIN-WEIGHER.

SPECIFICATION forming part of Letters Patent No. 342,402, dated May 25, 1886.

Application filed September 28, 1885. Serial No. 178,403. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM VANDERVEER, a citizen of the United States, residing at Bushnell, in the county of McDonough and State of Illinois, have invented certain new and useful Improvements in Automatic Grain-Weighers, of which the following is a specification.

This invention relates to automatic grain-weighing machines; and it consists in constructions and combinations hereinafter described and claimed.

In the accompanying drawings, which illustrate my invention, Figure 1 is a side elevation; Fig. 2, same elevation as Fig. 1, but the working parts shown in different relative positions from that shown at said figure; Fig. 3, a sectional elevation in line *x x* in Fig. 4; Fig. 4, a sectional elevation in line *y y* in Fig. 2.

Referring to the drawings by letters, the same letter indicating the same part in the different figures, A is the grain box or casing, formed, as shown in the drawings, of a rectangular casing, a portion, *a*, of the upper end of which is open and provided with a funnel or hopper shaped mouth, *a'*, which receives the grain in any ordinary manner. The casing A has an opening, *a''*, on one side, extending from *a'''* to its lower end, and its opposite side from *a''''* is curved, as shown. The casing A is supported on any suitable legs or other supports. At a point midway from the upper end, *a'''*, of the opening *a''* to the lower end of the casing A a rotating shaft, C, is journaled, to which is fixed four plates, D, which fit within the casing snugly, and fit also snugly against the curved side *a''''* of the casing A when the shaft C is rotated. Exterior to the casing A the shaft C has four arms, E, fixed thereto, one in same radial plane as each plate D.

F is a shaft extending across the casing A near its upper end, and within the closed portion of said casing. A plate or valve, *f*, extends radially from one side of the shaft F, and a plate or valve, *f'*, extends in an opposite direction from its other side. The plates *f f'* close the vertical passage or space through the casing A when they are transversely across it, as shown by dotted lines in Fig. 3. The shaft F extends outwardly through the casing A, and has a crank, *f''*, on its outer end. A spring, *g*, attached to the casing and to the crank *f''*, tends to hold the valves *f f'* in the positions shown by dotted lines in Figs. 2 and 3, with the valve *f* resting against the ledge *f'''*. The crank *f''* is connected by a link or rod, *g'*, with a bar, H, which slides in guides *h*. The bar H has projecting ears *h'*, in which is hinged a tappet, *i*. The tappet *i* is formed of three sides of a square, as shown at Fig. 4, and is hinged to the ears *h'*, near the end of its upper side.

J is the detent-lever pivoted at *j*, and its short end arranged to engage with teeth *h''* in the sliding bar H.

K is a bar which slides in ways *k*, and is held downwardly by a spring, *k'*. The upper end of the bar K rests just below and close to the outer end of the detent-lever J, and the lower end of the bar K is forked.

L is a graduated scale-beam pivoted in brackets *l*, its outer end provided with an ordinary weight, *l'*, and its inner end extended and resting beneath the fork in the lower end of the bar K.

M is an ordinary wheel-register, operated by an ordinary elbow-shaped lever, *m'*, one end of which is formed into a pawl for that purpose, and the other end, *m''*, of which is in such proximity to the arms E that pins *e*, one of which is fixed to each arm E, will successively act on the lever *m'*.

In describing the operation of my invention, I will suppose that the plates D are standing in the positions shown at Fig. 1 and the plates *f f'* in the positions shown by dotted lines at same figure, where they are held by the detent-lever J in contact with a notch in the sliding bar H at the same time one of the arms E is resting on the end of the lever L, as shown at same figure. The weight *l'* being set so that any given quantity of grain passing downward onto that plate D, which is coincident with the arm E which is resting on the scale-beam, will force the plate D in the direction shown by the arrow at same figure, and thereby force the arm E downwardly and with it the scale-beam, as shown by dotted lines at same figure, until the scale-beam escapes from the arm E. When the scale-beam escapes, as last described, its end will move rapidly up-

ward, and, striking the lower end of the sliding bar K, will force it upwardly against the lever J, and thereby release it from the sliding bar H, which, being freed, the spring *g* will draw upwardly on the crank *f''*, and, turning the shaft F, bring the plates or valves *f f'* transversely across the box or casing A, as shown by dotted lines at Fig. 2. It will thus be seen that as each plate D is loaded it starts downwardly to discharge its contents, and, further, that as soon as this movement of a plate D takes place, the plates *f f'* are immediately swung, as already described herein, to act as cut-offs in preventing grain falling among that contained above the plate D after it is weighed. As the next plate D is swinging, by the movement of the loaded plate D into position to receive its load, its coincident arm E will come in contact with the tappet *i*, and, forcing it downwardly, will turn the valves *f f'* into vertical positions, as shown at Fig. 1, and thereby discharge the grain above them onto the plate D ready to receive it, and also open the passage for the further flow of grain to same plate until it is loaded and moves to discharge, as already described. When the sliding bar H is moved downwardly, as last described, the detent-lever J will again engage with and hold it until released by the action of the bar K and the scale-beam, as hereinbefore described. When the tappet *i* is moved downwardly by an arm, E, as hereinbefore described, until it reaches the lower edge of the block *r*, it (the tappet) will swing under said block, as shown by dotted lines at Fig. 4, and thus turn its upper side, on which the arm E is acting at such an inclination as to permit said arm to escape from the tappet *i*. As each plate D moves forward to discharge its contained quantity of grain a pin, *e*, on an arm, E, coming in contact with the lever *m'*, will operate the register, and thus tally the measurements in an evident and well-known manner.

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

1. In combination with a casing or box, A, and a rotary series of grain-holders, D, a rotary cut-off, *f f'*, actuated by a sliding bar, H, which receives motion from arms E, that move with the plates D, substantially as and for the purpose specified.

2. In a grain-weighing machine, in combination, a casing, rotary grain-plates D, rotary cut-off *f f'*, arms E, slide-bar H, tilting catch *i*, rod *g'*, and spring *g*, substantially as and for the purpose specified.

3. In a grain-weighing machine, in combination, a casing, rotary grain-plates D, rotary cut-off *f f'*, arms E, slide-bar H, tilting catch *i*, rod *g'*, and spring *g*, detent J, sliding bar K, and scale-beam L, substantially as and for the purpose specified.

4. In a grain-weighing machine, in combination, rotary plates D, arms E, rotary cut-off *f f'*, and means, substantially as described, for transmitting motion from the arms E to the cut-off *f f'*, as and for the purpose specified.

5. In a grain-weighing machine, in combination, the rotary cut-off *f f'*, crank *f''*, spring *g*, arm *g'*, sliding bar H, and detent J, substantially as and for the purpose specified.

6. In a grain-weighing machine, in combination, case A, rotary plates D, arms E, sliding bar H, and swinging tappet *i*, substantially as and for the purpose specified.

7. In combination, the plates D, arms E, scale-beam L, and sliding spring-bar K, adapted to be acted on by the scale-beam when released from the arms E, substantially as and for the purpose specified.

8. In combination, the scale-beam L, sliding spring-bar K, detent J, sliding bar H, rod *g'*, shaft F, and plates *f f'*, substantially as and for the purpose specified.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM VANDERVEER.

Witnesses:

H. W. CARPENTER,

H. M. RICHARDS.