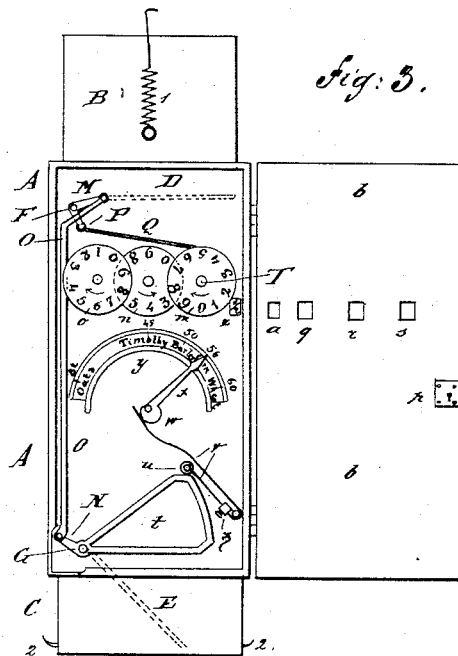
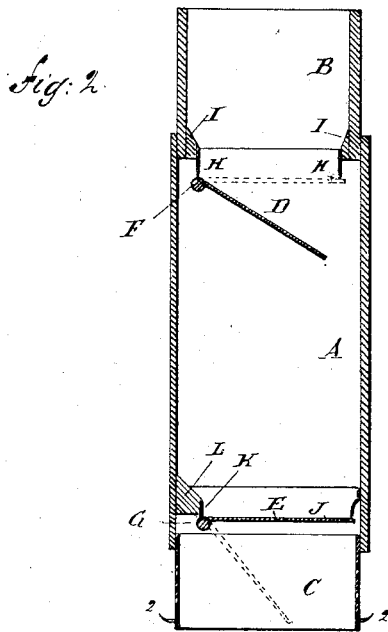
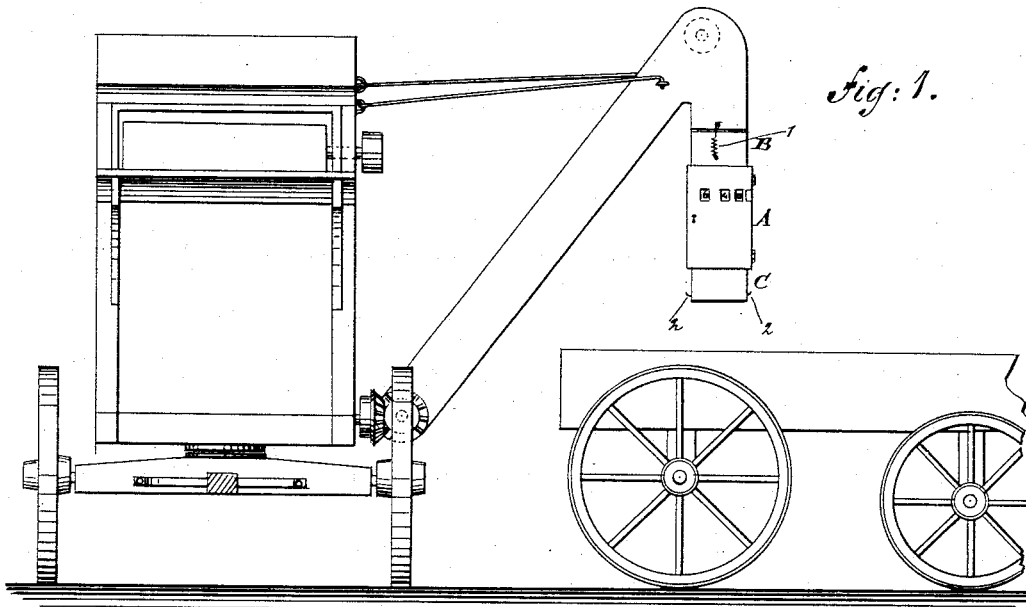


R. S. GABBEY.

AUTOMATIC GRAIN WEIGHING AND REGISTERING MACHINE.

No. 343,763.

Patented June 15, 1886.



WITNESSES:

Chas. N. K. A.
C. Sedgwick

INVENTOR:

R. S. Gabbey

BY

Munn. & Co.

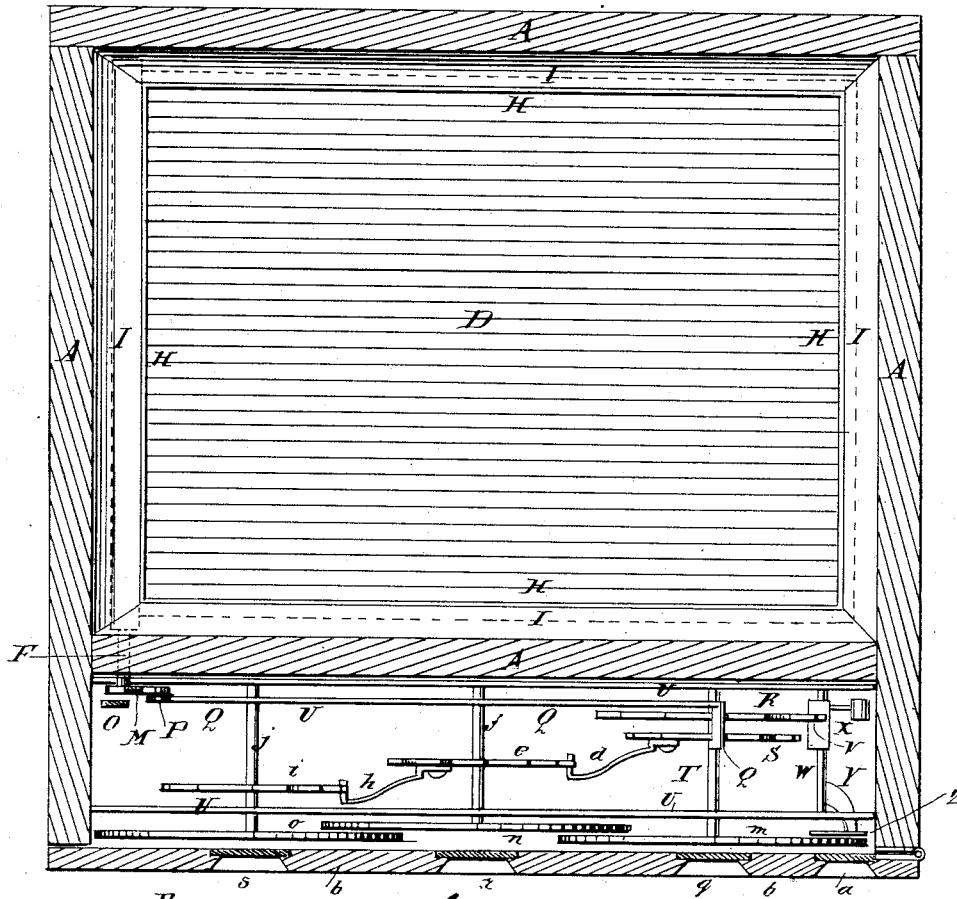
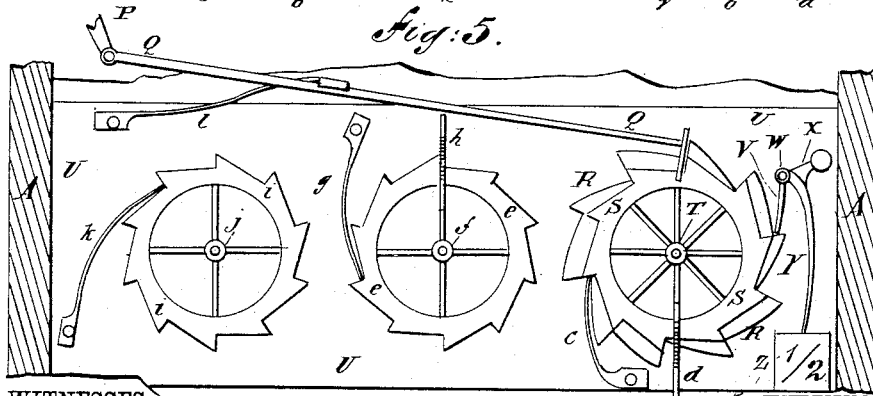
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Fig. 4.*Fig. 5.*

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UNITED STATES PATENT OFFICE.

ROBERT S. GABBEY, OF ROSSVILLE, KANSAS.

AUTOMATIC GRAIN WEIGHING AND REGISTERING MACHINE.

SPECIFICATION forming part of Letters Patent No. 343,763, dated June 15, 1886.

Application filed August 25, 1885. Serial No. 175,297. (No model.)

To all whom it may concern:

Be it known that I, ROBERT S. GABBEY, of Rossville, in the county of Shawnee and State of Kansas, have invented certain new and useful Improvements in Automatic Grain Weighing and Registering Machines, of which the following is a full, clear, and exact description.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a front elevation of one of my improved grain-weighing and registering machines, shown as applied to the elevator of a grain-separator. Fig. 2 is a sectional front elevation of the same, showing the valves. Fig. 3 is a front elevation of the same, the door being shown open. Fig. 4 is a sectional plan view of the same. Fig. 5 is a sectional front elevation of a part of the same, showing the registering-wheels and their attachments.

The object of this invention is to provide automatic grain weighing and registering machines designed especially for attachment to the elevator-spouts of grain-separators and corn-shellers, and which shall be convenient in use and accurate in operation, whether the grain be loaded in sacks or in bulk.

The invention consists in the construction and combination of various parts of the machine, as will be hereinafter fully described, and then pointed out in the claims.

The case of the machine is made in three parts—a larger central part, A, and two smaller end parts, B C, the inner ends of which are secured in the ends of the central part, A. The case can be made of any suitable material; but I prefer to make the central and upper parts, A B, of wood, and the lower part, C, of sheet metal. In the upper and lower ends of the central part, A, of the case are placed plate-valves D E, which are attached at their rear edges to shafts F G, rocking in bearings on the sides of the said part A of the case. The upper valve, D, closes against the sharp beveled edge of a metal strap, H, secured to cleats I, attached to the upper part, B, of the case at its lower end. The strap H is designed to cut off straws, weeds, and other sub-

stances that would prevent the said valve from closing tightly. The lower valve, E, closes at its sides and forward edge against the lower edge of a metal strap, J, the upper parts of which are bent outward and upward, and are attached to the inner surface of the lower end of the central part, A. The rear part of the lower valve, E, closes against the lower edge of a metal strap, K, secured to a cleat, L, attached to the inner surface of the rear side of the central part, A, of the case. To the end of the shaft, F, is attached or upon it is formed an arm, M, projecting upward and forward from the said shaft, and to the end of the shaft G is attached or upon it is formed an arm, N, projecting upward and rearward from the said shaft G. To the end of the arm N is pivoted the lower end of a connecting rod, O, which passes up vertically, and has its upper end inclined forward and pivoted to the end of the arm M. By this construction the valves D E are so connected that one of the said valves will always be closed when the other is open.

To the end of the shaft F is attached an arm, P, which projects downward and forward, and to its end is pivoted the rear end of the pawl Q. The forward or engaging end of the pawl Q is bent to one side, and rests upon the rims of the two ratchet-wheels R S, placed side by side upon the shaft T, which is journaled to the frame U, secured to the side of the central part, A, of the case. The ratchet-wheel R is placed loosely upon the shaft T, and the ratchet-wheel S is rigidly attached to the said shaft T, and carries the said shaft with it in its revolution. The wheel R is made larger than the wheel S, and the notches between its teeth are made alternately deep and shallow, the bottoms of the deep notches being at the same level as the bottoms of the notches of the teeth of the wheel S, and the shallow notches being of such a depth that when the pawl Q rests in one of the said shallow notches it will pass over the teeth of the wheel S without touching them. With this construction, as the valve D is lowered to admit grain into the central part, A, of the case, which is designed to contain half a bushel, the pawl Q is drawn back, and when the valve D

is raised to stop the inflow of the grain the pawl Q will be pushed forward, and will revolve the wheel R through the space of one tooth, and at every second forward movement will revolve the two wheels R S through the space of one tooth.

The wheel R is held from being turned back by the friction of the pawl Q when drawn back for another stroke by a pawl, V, rigidly attached to the shaft W, which is pivoted to the frame U, and to which is also rigidly attached an arm, X, provided with a weight of sufficient gravity to hold the engaging end of the pawl V against the teeth of the wheel R. To the shaft W is also rigidly attached a downwardly-projecting arm, Y, to the lower end of which is attached a plate, Z, bearing the numeral $\frac{1}{2}$. With this construction, when the pawl V rests in a shallow notch of the wheel R, the plate Z will be held opposite a hole, *a*, in the door *b*, that covers the register, and through which the numeral $\frac{1}{2}$ can be seen; but when the pawl V rests in a deep notch of the wheel R, which occurs when the wheel S is moved, the plate Z will be carried past the said hole *a*, so that the numeral $\frac{1}{2}$ cannot be seen.

The wheel S is held from being turned back by the friction of the pawl Q when drawn back for another stroke by a spring-pawl, *c*, attached to the frame U, and the engaging end of which rests against the teeth of the said wheel S. To the wheel S is attached an arm, *d*, which at each revolution of the wheel S strikes a tooth of a wheel, *e*, attached to a shaft, *f*, revolving in bearings in the frame U, and moves the said wheel through the space of one tooth. The wheel *e* is held stationary, except when moved by the arm *d*, by a spring-pawl, *g*, attached to the frame U, and which rests against the teeth of the said wheel *e*. To the wheel *e* is attached an arm, *h*, which at each revolution of the said wheel *e* strikes a tooth of the wheel *i*, attached to a shaft, *j*, pivoted to the frame U, and revolves the said wheel through the space of one tooth. The wheel *i* is held stationary, except when moved by the arm *h*, by a spring-pawl, *k*, attached to the frame U, and the engaging end of which rests upon the teeth of the said wheel *i*.

The pawl Q is held down upon the ratchet-wheels R S by a spring, *l*, attached to the frame U, and which rests upon the said pawl Q, as shown in Fig. 5.

Each of the wheels R S *e i* is made with ten teeth, and to the forward ends of the shafts T *f j* are attached dial-plates *m n o*, each of which is provided with ten numerals in their natural order.

The sides of the middle part, A, of the case are extended beyond the front of the said case, to form a space or compartment to receive the register, which space is closed by a door, *b*, hinged to the edge of one of the extended sides of the middle part, A, of the case, and

secured when closed to the extended edge of the other side by a lock, *p*. In the door *b* are formed openings *q r s*, in such positions that the numerals of the dial-plates *m n o* can be read through the said openings. With this construction the dial *m* will show the units, the dial *n* the tens, and the dial *o* the hundreds, and so on if more wheels and dials be used.

To the shaft G of the lower valve, E, is rigidly attached the acute angle of an arm, *t*, made in the form of an isosceles triangle, and which is vibrated by the opening and closing of the valve E. The outer angles of the arm *t* are cut off, to form seats for the friction-roller *u*, pivoted to the end of the short arm of the spring *v*, attached to the frame U or the middle part, A, of the case. The long arm of the spring *v* rests against the eccentric *w*, pivoted to the frame U or the part A of the case, and which is provided with an index-finger, *x*, which points to a scale, *y*, of division-marks formed upon the said frame U or part A of the case, and which is marked with the names of the different grains and seeds to be cleaned and weighed and the number of pounds of each to a bushel. With this construction the tension of the spring *v* is regulated by adjusting the eccentric *w* by means of the index-finger *x* and the scale *y*, so that the said spring will hold the arm *t* with sufficient force to hold the valve E closed until the weight of a half a bushel of the grain or seed has been received upon it, when the said valve E will open to discharge the grain or seed, and the valve D will be closed to prevent any grain or seed from entering the middle part, A, of the case while the said valve E is open. The tension of the spring *v* can be further regulated by a clamp, *z*, placed upon it, and secured to it by a set-screw or other suitable means.

The case A B C is suspended from the discharge-spout of the elevator by spring-hooks 1, and the grain or seed can be discharged in bulk into a wagon-body, as indicated in Fig. 1, or can be discharged into sacks placed upon hooks 2, attached to the lower part, C, of the said case, as may be desired.

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

1. The combination, with the containing-case and the connected alternately opening and closing valves, of an adjustable spring, and arm connected to one of said valves and subjected to the action of said spring for adjusting the valves to the weight per bushel of the grain, substantially as set forth.

2. In a grain weighing and registering machine, the combination of a containing-case, a pair of connected valves, a register, a mechanism to enable the shaft of one valve to actuate the register, and an adjustable spring and arm, the latter being subject to the action of

said spring and connected to a valve, substantially as and for the purpose specified.

3. In a grain weighing and registering machine, the combination, with the lower valve, 5 E, of the arm *t*, the spring *v*, having friction-roller *u*, and the eccentric and index finger *w* *x*, substantially as herein shown and described, whereby the said spring can be readily ad-

justed to the number of pounds of the substance at which the valve is to be dropped, as is set forth.

ROBT. S. GABBEY.

Witnesses:

B. D. MILEHAM,
ISAAC LARRANCE.