W. H. ALLEN.

Grain-Meter.

No. 223,692. Patented Jan. 20, 1880.

Fig: 1.

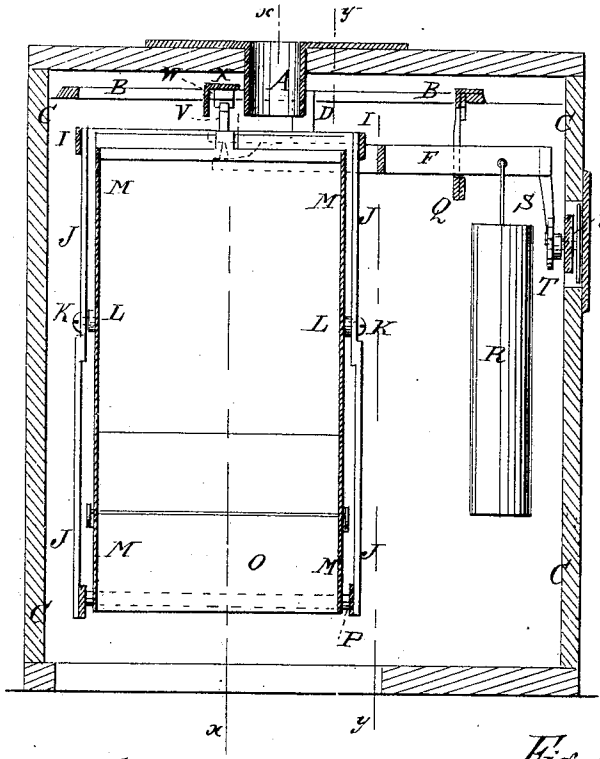


Fig: 2.

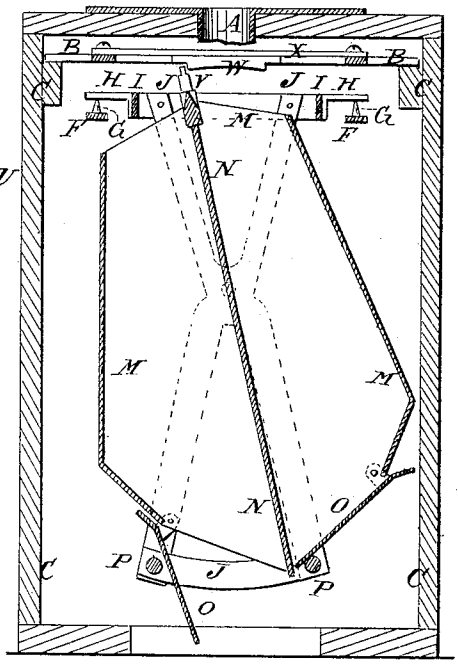


Fig: 3.

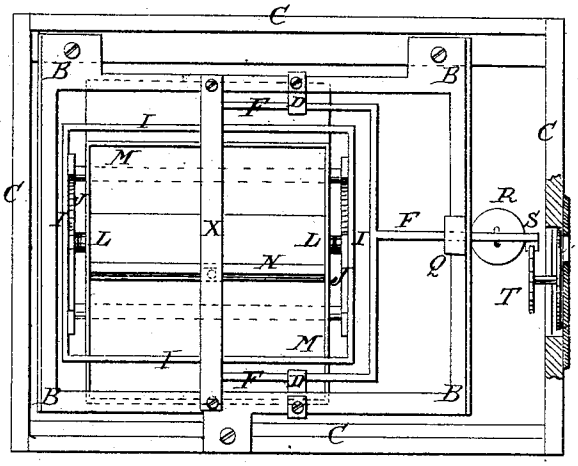


Fig: 4.

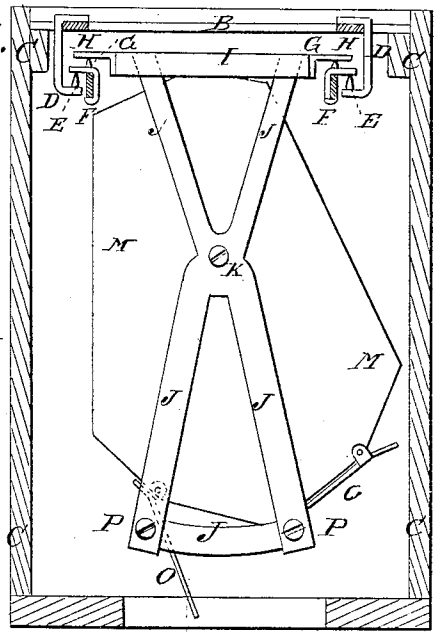
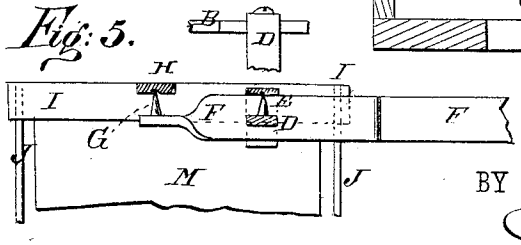


Fig: 5.



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UNITED STATES PATENT OFFICE.

WILLIAM H. ALLEN, OF NEW YORK, N. Y.

GRAIN-METER.

SPECIFICATION forming part of Letters Patent No. 223,692, dated January 20, 1880.

Application filed September 13, 1879.

To all whom it may concern:

Be it known that I, WILLIAM H. ALLEN, of the city, county, and State of New York, have invented a new and useful Improvement in Automatic Grain Weighing and Registering Machines, of which the following is a specification.

Figure 1 is a sectional side elevation of my improvement. Fig. 2 is a sectional end elevation, taken through the line *x x*, Fig. 1. Fig. 3 is a plan view of the machine. Fig. 4 is a sectional end elevation taken through the line *y y*, Fig. 1. Fig. 5 is a detailed view, showing the pivot-points.

The object of this invention is to furnish an improved machine for weighing grain and other substances as they flow from a spout, discharging them in uniform quantities into a hopper or other receiver, and registering the weight of the substance discharged.

Similar letters of reference indicate corresponding parts.

A represents the spout through which the grain or other substance enters the machine. B is a frame attached to a suitable framework or casing, C.

To the opposite side bars of the frame B are attached two hangers, D, to which are attached upwardly-projecting points E, to serve as pivots to the forked rear part of the lever F.

To the ends of the arms of the lever F are attached upwardly-projecting points G, upon which rest the ends of arms H, attached to the frame I.

To the ends of the frame I are attached the upper ends of two frames, J, to which, a little above their centers, are attached pivots K. The pivots K enter sockets L, attached to the ends of the box M a little above their centers, as shown in Fig. 1.

The top of the box M is open and its sides incline outward toward their lower ends, making the lower part of the box M the wider. The lower ends of the sides of the box M incline inward and downward to form the stationary part of the inclined bottom. The box M is divided into two equal compartments by a fixed partition, N.

To the box M are hinged valves O, which form the movable parts of the bottom, and which are made of such a length that their lower edges may close against the opposite sides of the lower end of the partition N. The valves O are supported, when closed, by rods P, pivoted to the lower corners of the frames J.

The forward end of the lever F passes through a guide-slot in a hanger, Q, attached to the frame B. From the forward part of the lever F is suspended a balancing-weight, R.

To the forward end of the lever F is attached a pawl, S, which, at each descent of the said forward end of the lever F, engages with a ratchet-wheel, T, and operates a register, U.

To the center of the upper edge of the fixed partition N is attached a short arm, V, the upper end of which rests alternately against the opposite ends of a catch, W, attached to or formed upon the lower side of the cross-bar X. The ends of the cross-bar X are attached to the side bars of the frame B.

When grain or other substance is being received into one of the compartments of the box M, the hinged bottom valve, O, of that compartment is held closed by one of the rods P. As soon as the amount of grain for which the machine has been set has entered the box M, the said box overbalances the weight R and descends. This movement releases the arm V from the catch W, and allows the weight of the grain to oscillate the box M. This movement carries the bottom valve, O, away from the rod P, so that it can swing down and discharge the grain. At the same time the arm V is carried over to the other end of the catch W, and catches upon it as the box M is lightened by the outflow of the grain. These various movements occur almost simultaneously, so that the measurement will be very accurate, an allowance being made for the small amount of grain that may pass in while the change

of position is taking place, as described in my application for a patent allowed August 4, 1879.

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

The combination, with the hangers D, having points E, of the forked lever F, carrying balance-weights, pawl, and points G, the frame I, having arms H, the frames J, having pivots K, the divided and valved box M, having sockets L, the rods P, pivoted to frame J, the slotted hanger Q, the wheel T, and the register U, as shown and described.

WILLIAM H. ALLEN.

Witnesses:
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C. SEDGWICK.