

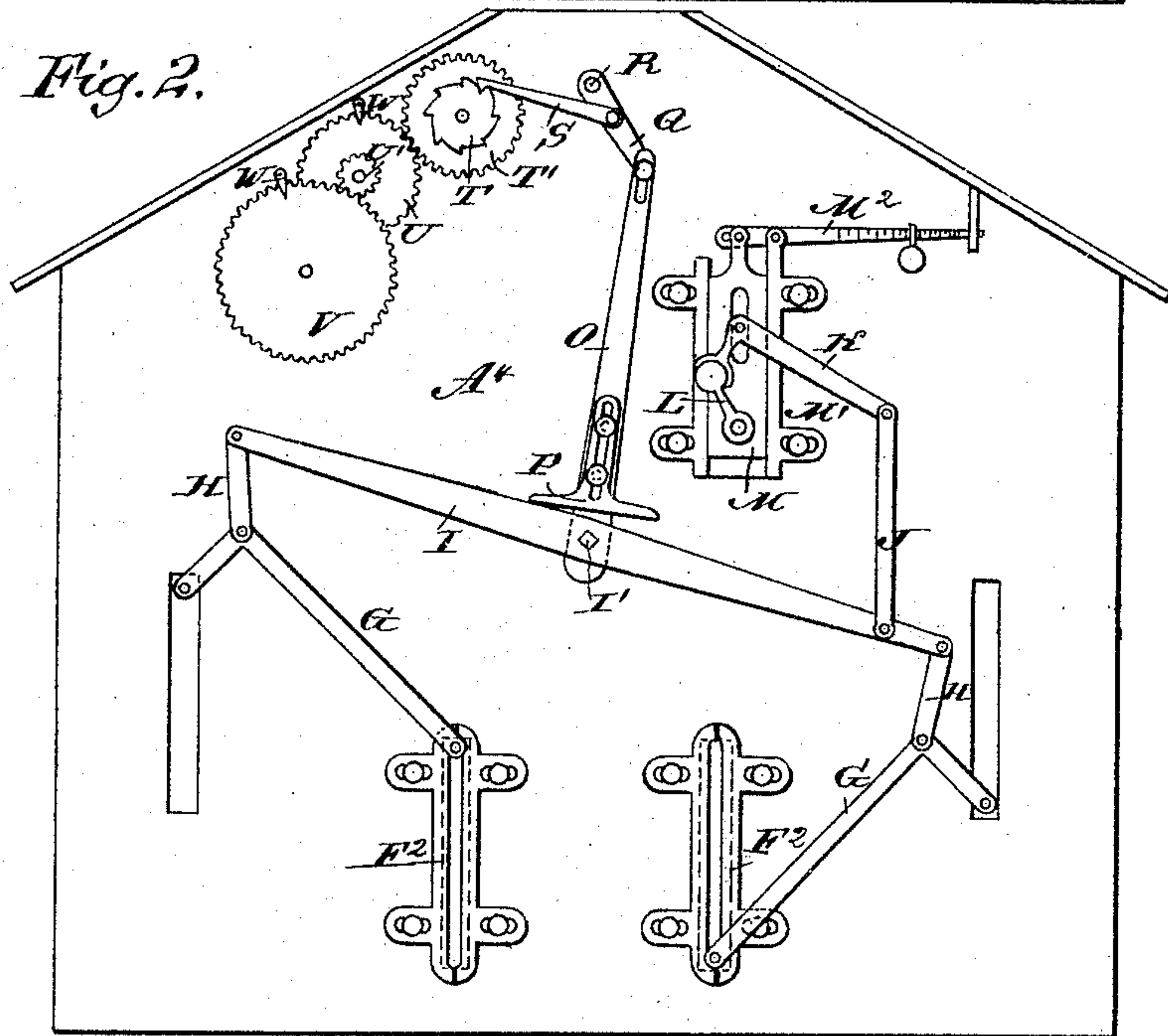
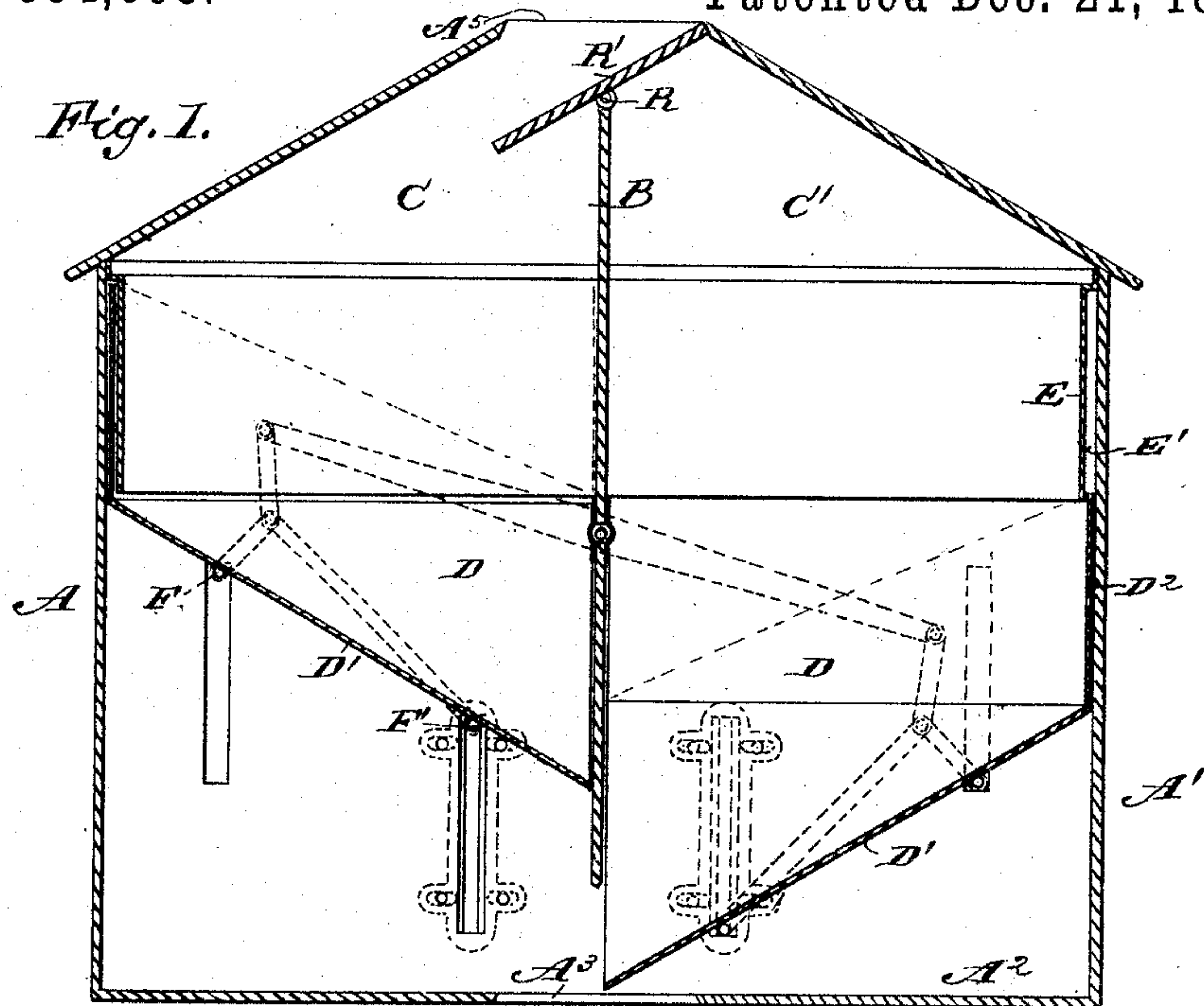
(No Model.)

W. H. ERNST.

GRAIN WEIGHING AND REGISTERING APPARATUS.

No. 354,695.

Patented Dec. 21, 1886.



WITNESSES:

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GRAIN WEIGHING AND REGISTERING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 354,695, dated December 21, 1886.

Application filed March 26, 1886. Serial No. 196,670. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. ERNST, of Chase, in the county of Rice and State of Kansas, have invented a new and Improved Grain Weighing and Registering Apparatus, of which the following is a full, clear, and exact description.

The object of my invention is to provide a new and improved apparatus for weighing and registering grain which is automatic in operation and simple in construction.

The invention consists of two movable hoppers, a shifting gate or valve which conducts the grain into the hoppers, and devices for weighing and registering.

The invention also consists of various parts and details and combinations of the same, as will be fully described and claimed hereinafter.

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

Figure 1 is a sectional elevation showing my improvement. Fig. 2 is an end view of the same.

A box, A, of convenient size and shape, is provided with a central partition, B, which divides the box A into two compartments, C and C'. In each of these compartments is placed a grain-receptacle, D, provided with an inclined bottom, D', and the side D², which is guided in a slot, E', formed by the side A' of the box A and the cover E. The inner side of the receptacle D opens against the partition B, and as the latter does not extend quite to the bottom A² of the box A it is evident that when the receptacle D is in its lowest position it opens into the aperture A³ in the bottom A². When the receptacle D is in its uppermost position, the partition B forms a cover for the side of the receptacle D.

To the under side of the inclined bottom D' of each receptacle D are attached the rods F and F', which project at each end A⁴ of the box A through an aperture in the same, and are guided in slides F², made in two parts and fastened to the outsides of the said ends of the box A. The outer ends of the rods F and F' are connected by the bent arms G with the links H, each of which is pivotally attached to one end of the beam I, fastened to a rod, I', mounted

to revolve in the ends A⁴ of the box A. The beam I on one end, A⁴, of the box A is additionally provided with a link, J, connected with a bell-crank lever, K, which engages with the ball-shaped end of a lever, L, pivoted to the slide M, moved in laterally-adjustable guides M', and connected at its upper end with a weighing-beam, M², of the usual construction.

The rod I' forms a pivot for the lever O, which extends upward, is provided on its lower end with the adjustable foot-piece P, and is pivotally connected at its upper end to the crank-arm Q, secured to a rod, R, which extends from one end, A⁴, of the box to the other end, and on which is secured, between the ends A⁴ and inside of the box A, the gate R', which connects the aperture A⁵ in the top of the box A alternately with one or the other of the receptacles D.

A pawl, S, pivoted on the arm Q engages a ratchet-wheel, T, mounted on a stud in the end A⁴ of the box, the said stud being provided with a cog-wheel, T', which meshes into a cog-wheel, U, mounted on a stud in the end of the box, and provided with a pinion, U', which meshes into a cog-wheel, V, mounted on a stud in the end A⁴ of the box. Pointers W are fixed in such a manner to the end A⁴ of the box that they project over the faces of the cog-wheels U and V, and indicate the revolutions of the said cog-wheels, respectively.

The operation is as follows: The grain enters through the opening A⁵ in the top of the box A, and passes, by means of the inclined gate R', into one compartment, C or C', and into the receptacle D, which is in its uppermost position, the grain being prevented from getting between the side D² of the hopper and the side of the box by the cover E. The receptacle D presses on the rods F and F', which tend to pull the beam I downward at one end; but this cannot be accomplished, as the beam I is held in position by the weighing-beam M² and its weight acting on the sliding plate M, the levers L and K, and the link J, attached to the beam I, until the pressure in the hopper is so great that the lever K can swing the lever L centrally, and thereby lift the weighing-beam M² and its weight. The receptacle D descends until the lower end of the inclined bottom D' passes the lower end of the partition B, so that

the grain can run through the opening A^3 in the bottom of the box. As soon as the receptacle D commences to descend the receptacle in the other compartment ascends by the action of the beam I, and when one receptacle has reached its lowest position the other has reached its uppermost position, and the gate R' has shifted by the action of the foot-piece P on the lever O, acting on the lever Q, attached to the rod R, which in turn also swings the gate R' , so as to connect the opening A^5 with the compartment C' , the grain then filling into the other hopper, and the action above described being repeated. The arm Q, attached to the rod R, operates the registering device by means of the pawl S engaging the ratchet-wheel T. Every time the gate R' is shifted the pawl S will cause the ratchet-wheel T to turn the distance of one tooth. Each revolution of the ratchet-wheel is registered by the pointer W over the cog-wheel U, and every hundred revolutions of the ratchet-wheel T is registered by the pointer W over the face of the cog-wheel V.

It will be seen that the amount of grain admitted to one receptacle D is regulated by the weight of the beam M^2 of the weighing device, and the shifting of the gate R' can be accomplished at any time by adjusting the foot-piece P up or down on the lever O, so that when the beam I oscillates on the rod I' it comes in contact with foot-piece P sooner or later.

The slides F^2 are made in two parts, so as to take the wear caused by the rods F and F' .

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

1. In a grain weighing and registering apparatus, the combination, with a box having a partition extending nearly to the bottom, of two movable grain-receptacles having their inner sides open and provided with inclined bottoms, substantially as described, whereby when the receptacles are raised the partition will form a cover for their inner sides, and when lowered will be free to discharge their contents, as set forth.

2. In a grain weighing and registering apparatus, the combination, with a box having a central partition extending nearly to the bottom of the same, and weighing and registering devices, of two movable grain-receptacles with inclined bottoms and open inner sides, a pivoted beam connected to said receptacles, and intermediate connections between the said beam and the weighing and registering devices, substantially as herein shown and described.

3. In a grain weighing and registering apparatus, the combination, with a box divided into two compartments by a partition extending nearly to the bottom, and weighing and registering devices, of two movable grain-receptacles having inclined bottoms and open inner sides, a pivoted beam connected to the receptacles, a pivoted gate in the upper part of the receptacles, and intermediate connections between the beam, gate, and weighing and registering devices, substantially as herein shown and described.

4. In a grain weighing and registering apparatus, the combination, with the box A, having the central partition, B, and slots in its sides, of the receptacles D, having inclined bottoms D' , the beam I, the rods F F' on the bottom of the receptacles, the bent arms G, connected to the said rods, and the links H, connected to the bent arms and to the beams, substantially as herein shown and described.

5. In a grain weighing and registering apparatus, the combination of the two receptacles D, provided with the inclined bottoms D' , the rods F and F' , the arms G, the links H, and the beam I, with the lever O, the adjustable foot-piece P, the arm Q, the rod R, and the shifting gate R' , substantially as shown and described.

6. In a grain weighing and registering apparatus, the combination of the receptacles D, having inclined bottoms D' , provided with the rods F and F' , connected on their outer ends with the arms G, pivotally attached to the links H, connected to the ends of the beam I, with the arm O, the adjustable foot-piece P, the arm Q, the rod R, the shifting gate R' , and the pawl S, operating a ratchet-wheel, T, attached to and operating the registering device, substantially as shown and described.

7. In a grain weighing and registering apparatus, the combination of the receptacles D, having inclined bottoms D' , and provided with the rods F and F' , connected with the arms G, pivotally attached to the links H, and the beam I, with the rod J, the bell-crank lever K, the lever L, and the sliding plate M, provided with the weighing-beam M^2 , substantially as shown and described.

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Witnesses:

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