C. H. HORTON.

Grain-Meter.

No. 225,834. Patented Mar. 23, 1880.

Fig. 2.

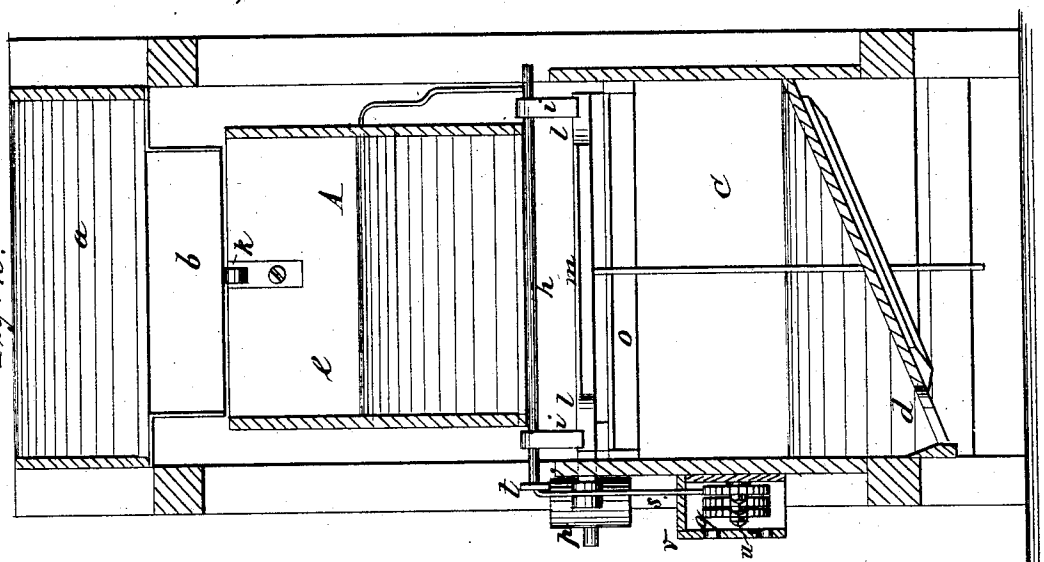
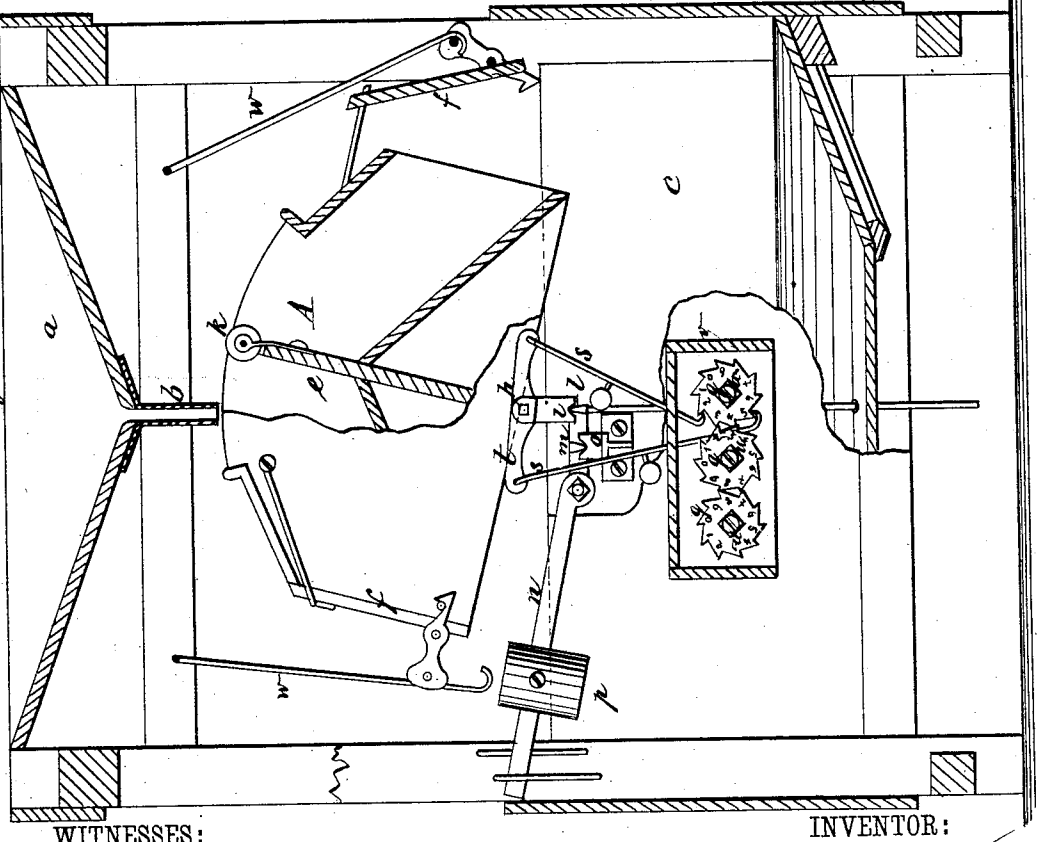


Fig. 1.



WITNESSES:

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UNITED STATES PATENT OFFICE.

CHARLES H. HORTON, OF BRIGHTON, OHIO.

GRAIN-METER.

SPECIFICATION forming part of Letters Patent No. 225,834, dated March 23, 1880.

Application filed July 8, 1879.

To all whom it may concern:

Be it known that I, CHARLES H. HORTON, of Brighton, in the county of Lorain and State of Ohio, have invented a new and Improved Apparatus for Weighing and Registering Grain, of which the following is a specification.

My improvements relate to apparatus for automatically weighing or measuring grain and registering the operation. The grain is received in a rocking box or receiver having two compartments that are alternately filled and emptied, the weight of grain acting to shift the box as required. The box is hung on a scale-beam having an adjustable weight, whereby the quantity discharged at each alternation is regulated, and the movement of the receiver gives motion to registering mechanism, whereby the oscillations are recorded.

The construction and operation will be more particularly described in connection with the accompanying drawings, wherein—

Figure 1 is a vertical longitudinal section of the apparatus. Fig. 2 is a vertical cross-section of the same.

Similar letters of reference indicate corresponding parts.

The grain to be weighed runs from a hopper, *a*, through a discharge-spout, *b*, in a continuous stream. The rocking receiver A discharges the grain into the bin *c*, from which it may run by an opening, *d*.

The receiver A consists of an oblong box, divided by a central cross-partition, *e*, into two compartments, having inclined bottoms and provided with the swinging end-gates *f*, that are hung so as to close by gravity. Upon each gate *f* are weighted latches *g*, that retain the gate closed.

The box A is supported on a cross-shaft, *h*, that is supported in standards *i*, so that the box A may rock endwise to bring the compartments alternately beneath the spout *b*. At the top of partition *e* is a stop-roller, *k*, which, by contact with the spout *b*, prevents further movement of the box until there is sufficient grain in the box to depress it bodily, as hereinafter described.

The standards *i* rest on knife-edge pivots *l* that project from a cross-bar, *m*, which is the fulcrum-bar of a scale-beam, *n*. The bar *m* rests on knife-edges in a fixed support, *o*, in such position that the box A and contents oppose the adjustable weight *p* of the scale-beam.

Upon one side of the bin *c* a train of registering-wheels, *q*, is fitted. The primary wheel of the train is moved the distance of one tooth at every single or alternate oscillation of the box A by means of the pawls *s*, that are connected to a bar, *t*, that is attached on the supporting-shaft *h* of the receiving-box. The registering-wheels *q* are each fitted on a stud or arbor, *u*, having a square head for the application of a key to set the wheels. The wheels are covered by a fixed case, *v*, which is apertured at the front for observation of the wheels and to permit the insertion of a key when the wheels are to be set. The case *v* protects the wheels and prevents their being changed by accident or design except by the use of a key.

The operation of these parts is as follows: The weight *p* is to be set on the beam according to the quantity of grain that it is desired to measure at each movement of the receiver, and the grain entering one side of the receiver A will first act to bring the same to a level, where the box will be held by roller-stop *k*. As soon as the grain has accumulated in a quantity sufficient to overbalance the weight *p* the scale-beam is thrown up and box A depressed so that roller *k* may pass beneath the spout *b*, and the box A will then be moved in the standards *i* by the weight of the grain. This movement is to be checked by stops arranged in any desired manner. As the end of the box moves downward a bar connecting the latches *g* at that end is caught by a hook, *w*, that is suspended from above, the latches thereby released, and the gate *f* opened to permit escape of the grain into bin *c*. The weight *p* of the scale-beam raises the box A bodily as soon as the grain is discharged, and the box is righted, as before, by the fresh supply in the other side of the box.

By these means the grain is delivered automatically in regulated quantities and a record kept of the operation.

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

1. The combination of the hopper *a b*, the rocking box A, having stop *k*, the middle pivoted cross-bar, *t*, connecting, by pawls *s s*, with the registering mechanism, and the scale-beam *n*, as and for the purpose specified.

2. In grain-measuring apparatus, the rocking receiver A, the hinged end-gates *f*, gravity-latches *g*, and suspended hooks *w*, combined for operation substantially as and for the purposes described.

CHARLES H. HORTON.

Witnesses:
R. N. GOODWIN,
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