

(No Model.)

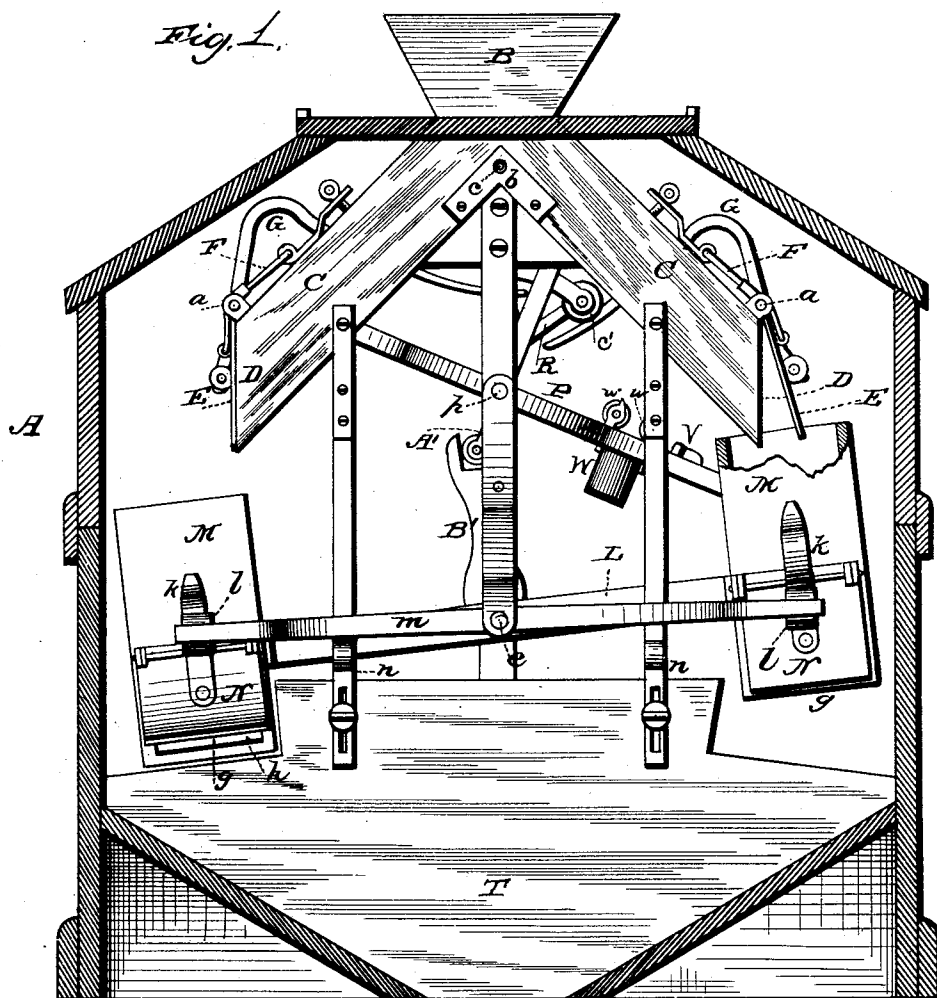
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J. W. MOYERS.

GRAIN MEASURE.

No. 308,322.

Patented Nov. 18, 1884.



WITNESSES

J. H. Bates
John T. Morrow.

INVENTOR

John W. Mayers
by Andrews Smith
His ATTORNEYS

(No Model.)

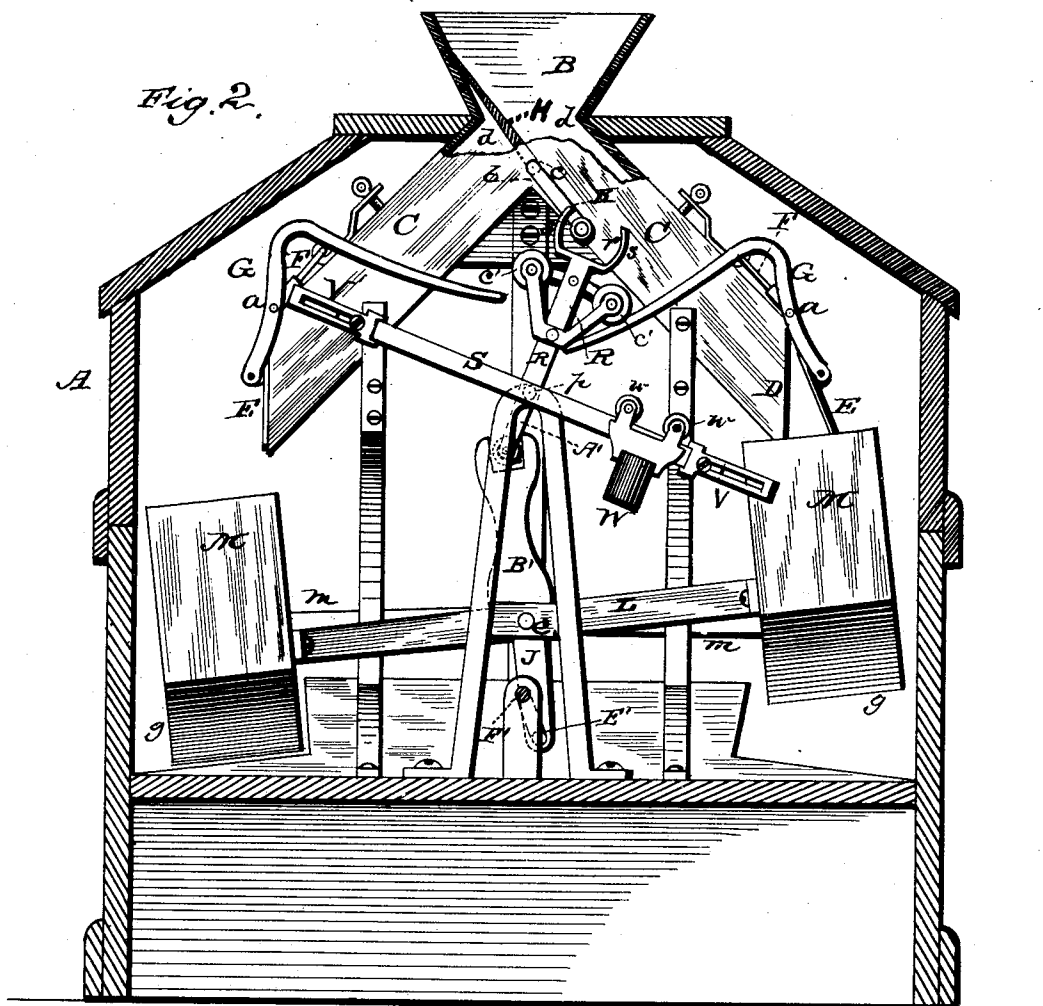
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Fig. 3.

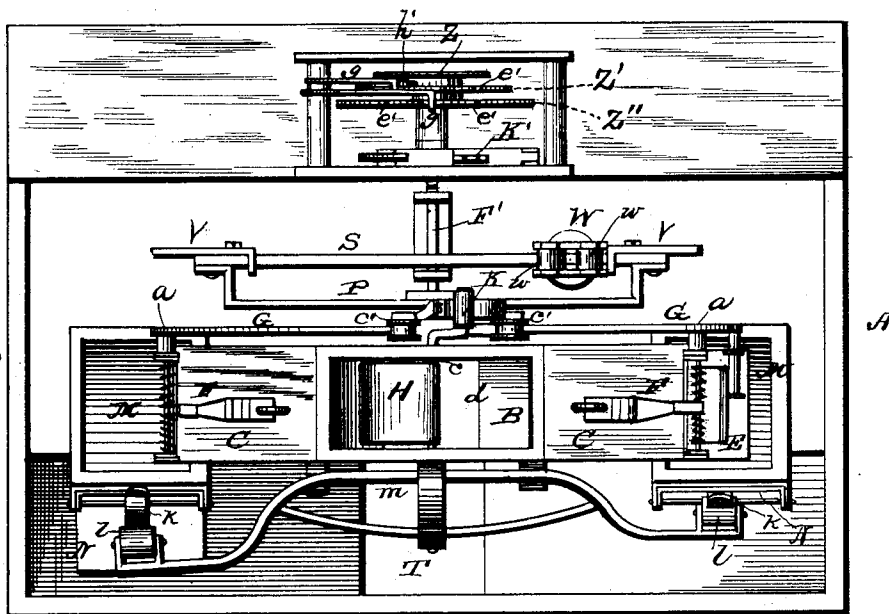
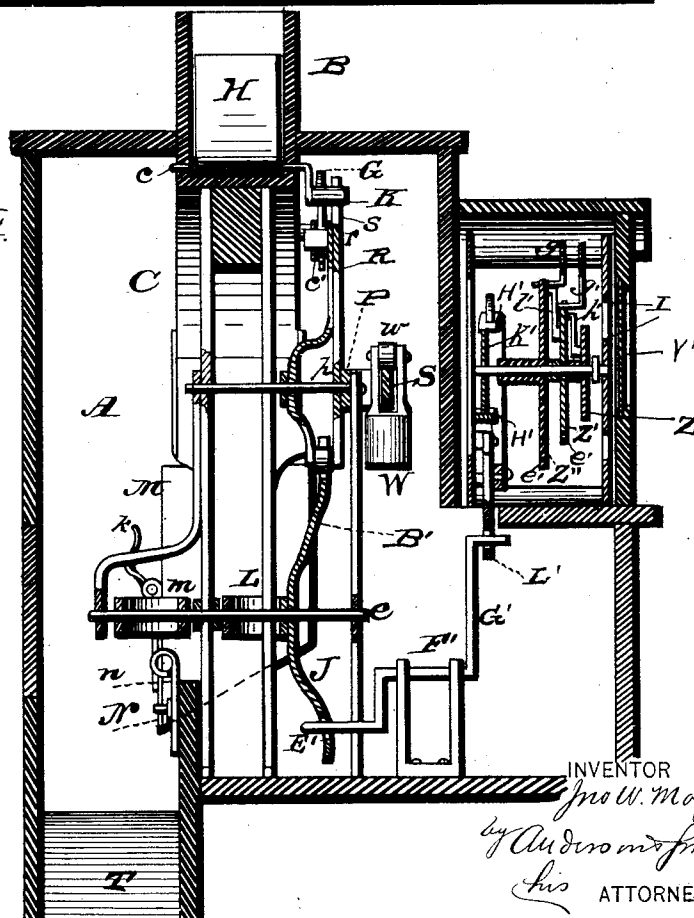


Fig. 4.



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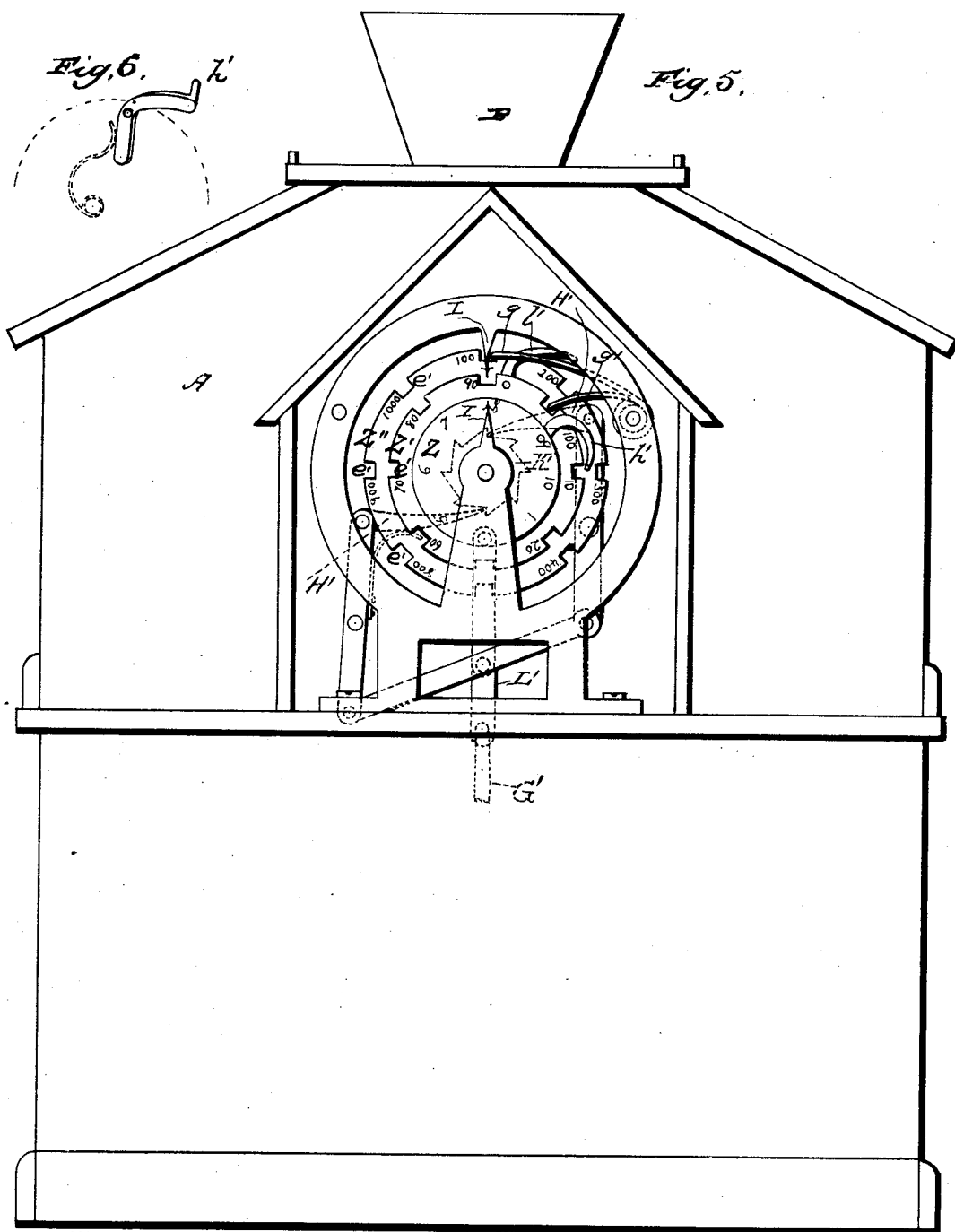
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UNITED STATES PATENT OFFICE.

JOHN W. MOYERS, OF BASCO, ASSIGNOR OF ONE-HALF TO J. K. STOCKTON,
HAMILTON, ILLINOIS.

GRAIN-MEASURE.

SPECIFICATION forming part of Letters Patent No. 308,322, dated November 18, 1884.

Application filed March 26, 1884. (No model.)

To all whom it may concern:

Be it known that I, JOHN W. MOYERS, a citizen of the United States, residing at Basco, in the county of Hancock and State of Illinois, have invented certain new and useful Improvements in Grain-Measures; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

Figure 1 of the drawings is a vertical sectional view of my device, looking from the rear. Fig. 2 is a similar view looking from the front. Fig. 3 is a plan view, and Fig. 4 is a vertical transverse sectional view, of the same. Fig. 5 is a face view of the registering mechanism, and Fig. 6 is a detail view.

This invention has relation to grain-measuring machines; and it consists in the construction and novel arrangement of parts, as hereinafter set forth.

In the accompanying drawings, the letter A designates a close case, in which the tilting lever, its measuring-boxes, and the operating and registering mechanism are located, and whereby they are protected from the dust or casual disarrangement.

B indicates a hopper above the case, which is secured in fixed position, and is provided on each side with an inclined chute, C, having at its lower opening, D, a spring-gate, E, which is hinged to the upper marginal portion of the opening or mouth D.

F represents the spring, which is made with tension to hold the gate closed against the margin of the mouth D, except when held open by a lever-arm, G, which is connected to the gate and is pivoted at *a*. The lower walls or bottoms of the chutes C meet in an angular rise at *b* in the throat of the hopper, and to this rise is hinged a vibratory valve, H, which, when operated by a lever-arm, K, of its shaft *c*, closes one or the other of the lateral chute-openings *d* in the throat of the hopper in an alternate manner, as hereinafter referred to.

L represents the tilting lever, pivoted at *e*,

the arms of which extend laterally, and are provided at their ends with the measuring-boxes M M, open at top, and having inclined or chute bottoms *g*, extending to lower discharge-openings, *h*, which are provided with valves or gates N, hinged to said boxes at the upper margins of the discharge-openings. The gates N are provided with curve bearings *k*, usually having some elasticity in their upper or curved portions, *k*, which are adapted to engage rollers *l* on the ends of an operating-lever, *m*. Spring-checks *n* are provided under the arms of this lever to limit its movement, causing it, when the tilting lever is operated, to close the gate of one of the measuring-boxes and open that of the other box at the opposite end of the lever. The checks *n* are adjustable, and may be made to work as closely against the margins of the discharge-openings of the boxes as is desirable to prevent leakage. The boxes M M are respectively arranged under the discharge-openings of the lateral chutes C C, and operate automatically and alternately to depress the ends of the tilting lever, first one end and then the opposite end, this operation being effected by the load of grain which the operating-box receives from the hopper through the open chute on its own side, the opposite chute of said hopper being for the time closed by the valve H. A secondary transverse lever, P, pivoted at *p* to the frame-work, and having a slide-bar, S, extending lengthwise thereof past its pivot-point, is provided with an upwardly-extending arm, R, the upper portion of which is in the form of a bracket-bearing, *r*, said bracket-bearing being designed to engage by its arms *s* alternately the arm K of the vibratory valve H of the hopper-throat when the lever P is vibrated. This vibration is automatically accomplished, the lever P having an arm, A', which is engaged by an arm, B', of the tilting lever L. The arm R of the lever P is also provided with bearings *c'*, preferably roller-bearings, which are adapted to engage the lever-arms G of the chute-gates E in an automatic manner when said lever P is operated by the tilting lever. In this movement it will appear that when the tilting lever is inclined in one direction the valve-moving lever P will be inclined in the opposite direction, and the gates

E will be automatically opened alternately at the descent of their respective measuring-boxes to discharge the contents thereof into the main chute T below.

- 5 On the slide-bar S of the governing-lever P is a moving weight, W, having rollers *w*, whereby it moves on said bar from the higher to the lower end thereof, its position being changed at each vibration of said lever. The
 10 movement of the weight is limited by adjustable stops V, arranged at each end of the slide-bar, which is provided in order that the amount of weight at the depressed end of the lever may be regulated by the character of the
 15 grain being measured. In this manner the lever P becomes a counterbalancing governor or regulator for the measuring-lever L, holding the box thereof which is being filled in the raised position until the filling is com-
 20 pleted. If the grain is of heavy character, the gage-stops V are moved outward; if light, these stops are adjusted inward. The leverage of the sliding weight W is in this manner readily adjusted. The main lever L is provided
 25 with an arm, J, which engages a crank-arm, E', of a rock-shaft, F', which, through an arm, G', operates a lever, L', which moves the pivoted spring-paws H', which alternately en-
 30 gage the ratchet-wheel K', turning the shaft thereof, and the digit-wheel Z, attached to the front end thereof. On this shaft are also loose sleeves carrying the "tens-wheel" Z' and the
 "hundreds-wheel" Z". In front are fixed to the framing the indicator-points I, and a view-
 35 opening, V', is made in the front wall of the casing which covers the registering mechanism. The wheels Z' and Z" are notched at
 regular intervals at *e'*, to engage the spring-
 40 holders *g'*, attached to the framing. To the digit-wheel Z is attached a spring-catch, *h'*,

which extends by its outer portion along in front of the marginal portion of the next wheel, Z', and has a spur extending back over said margin. When the digit-wheel has made a complete revolution, the catch *h'* is engaged 45 by the holder *g'*, said holder being lifted out of engagement with the notch of the wheel Z', and the catch is depressed at the same time, to engage the succeeding notch of said wheel Z', turning this wheel one interval. In the same 50 manner a spring-holder, *g*, and a spring-catch, Z', in combination with the wheels Z' and Z", serve to communicate the movement of the two wheels after it has completed one revolution to the hundreds-wheel, moving the latter 55 one interval. Another wheel may be added carrying numbers marking thousands, if necessary. The register may be regarded as marking bushels or half-bushels, according to the capacity of the measuring-boxes. In the reg- 60 ister shown in the drawings the digit-wheel is moved for each half-bushel marked, and the numbers register bushels.

Having described this invention, what I claim, and desire to secure by Letters Patent, 65 is—

The combination, with the automatic vibrating lever L, carrying the grain-measuring boxes, of the hopper having the lateral chutes provided with automatic closing-gates, 70 the automatic vibratory valve in said hopper actuated by the pivoted arm R, carrying the roller-bearings for operating the chute-gates, substantially as specified.

In testimony whereof I affix my signature in 75 presence of two witnesses.

JOHN W. MOYERS.

Witnesses:

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WM. W. KIRKPATRICK.