

(No Model.)

H. W. MOSHER.
AUTOMATIC GRAIN WEIGHING MACHINE.

No. 579,240.

Patented Mar. 23, 1897.

Fig. 1.

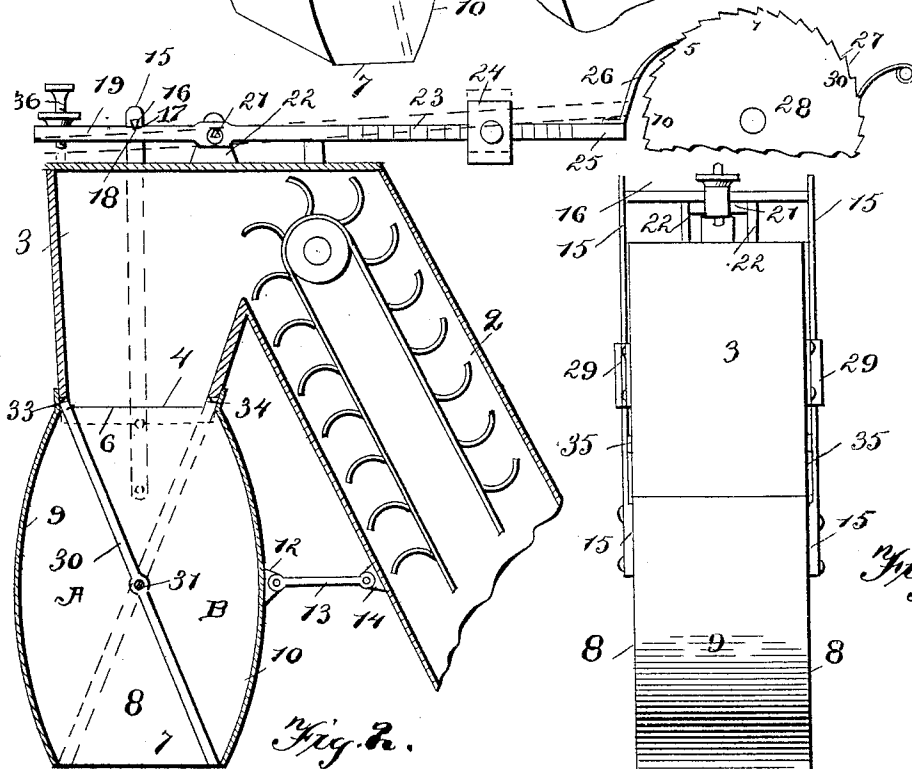
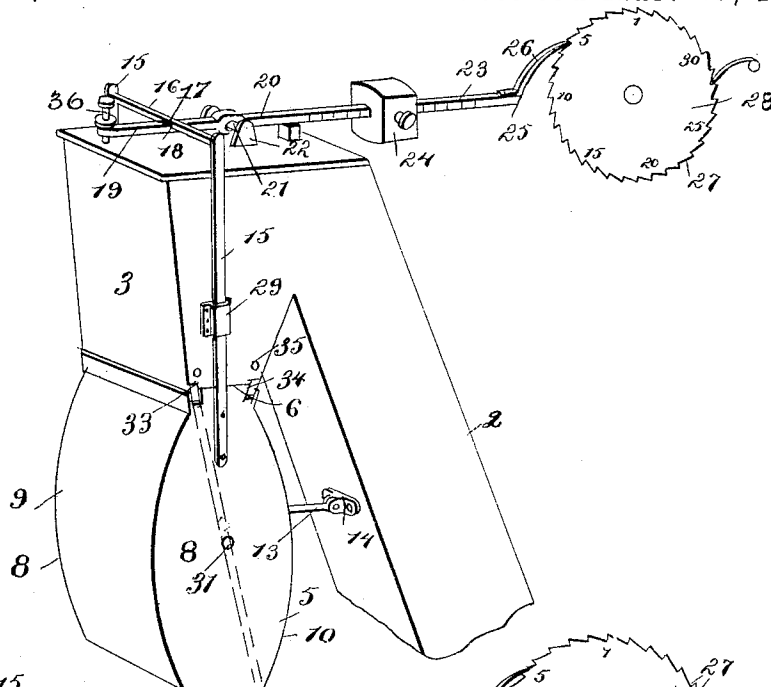


Fig. 2.

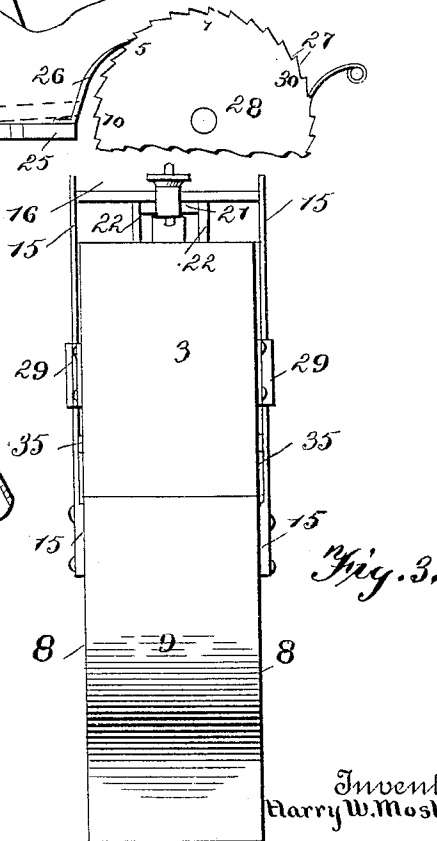


Fig. 3.

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UNITED STATES PATENT OFFICE.

HARRY W. MOSHER, OF GENEVA, NEBRASKA.

AUTOMATIC GRAIN-WEIGHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 579,240, dated March 23, 1897.

Application filed May 18, 1896. Serial No. 592,006. (No model.)

To all whom it may concern:

Be it known that I, HARRY W. MOSHER, a citizen of the United States, residing at Geneva, in the county of Fillmore and State of Nebraska, have invented certain new and useful Improvements in Automatic Grain-Weighing Machines; and I do 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.

My invention has relation to improvements in grain weighing or measuring devices, and more particularly to that class in which the grain is automatically weighed or measured while it is being transferred from one receptacle to another, as from the elevator to the granary or from one bin to another; and the object of the invention is to produce a simple, cheap, and convenient device of this class that will be reliable in use and automatic in operation; and to these ends the novelty consists in the construction, combination, and arrangement of the same, as will be hereinafter more fully described, and particularly pointed out in the claim.

In the accompanying drawings the same letters and figures of reference indicate the same parts of the invention, and for convenience of illustration I have shown the device as applied to the discharge-chute of a grain-elevator shaft.

Figure 1 is a perspective view of my improved grain-weighing machine as it appears in operation. Fig. 2 is a longitudinal section of the same, and Fig. 3 is a front view of the machine.

2 represents the leg of a grain elevator or chute, and 3 is its delivery or discharge opening, the mouth 4 of which is rectangular in form, and immediately below it is suspended a hopper 5, the mouth 6 of which and its discharge-opening 7 are exactly of the size and shape of the mouth 4 of the chute 3, the sides 8 8 of which hopper 5 are flat and parallel, and its front 9 and back 10 are semicircular in form, as shown, and to the back 10 is secured a bracket 12, in which is pivoted one end of a pitman 13, the other end of which is similarly pivoted to a bracket 14, secured to the chute 2, which limits the hopper to a short

vertical movement and prevents any oscillating or swaying motion.

The side bars 15 15 are rigidly secured to and support the hopper 5, and their upper ends are connected by a cross-bar 16, the central under section of which constitutes a knife-edge bearing 17, which rests upon a V-shaped bearing 18 in the shorter end 19 of the scale-beam 20, which is fulcrumed on a knife-edge bearing 21 on the bracket 22, and the free end 23 of said scale-beam 20 is graduated in the usual manner to correspond to bushels and pounds, and it is provided with the usual sliding weight 24. Its free end 25 is provided with a spring-pawl 26, which engages with the teeth 27 on the register 28, so that every time the hopper is depressed this end of the beam rises and registers the amount on the dial of the register.

The side bars 15 15 have a vertical reciprocating movement in the guide-brackets 29, rigidly secured to the sides of the discharge-opening 3 of the chute 2, and said guide-brackets and the pitman 13 insure the vertical movement of said hopper.

30 is a flat valve vertically pivoted on a central horizontal shaft 31, mounted in the sides 8 8 of the hopper 5, so that its lower end is flush with the discharge-opening 7, and its upper end extends a short distance above and outside of the mouth 6 of the hopper, and when said hopper is empty and consequently its mouth in close contact with the mouth 4 of the chute, and in this position the end is locked against any side movement by the rabbeted recesses 33 or 34 on the side plates 35 35, secured to the lower end of the sides of the mouth 4 of the hopper.

Referring to Fig. 2, where the valve 30 is shown in full lines, it will be seen that it divides the hopper 5 into two equal compartments A and B, the lower end of the valve closing the bottom or discharge opening 7 of the hopper, while its upper end is held over to one side by its engagement with the recess 33 on the plates 35. This leaves the mouth of the compartment B open and its bottom or exit closed. The weight 24 having been adjusted to measure or weigh any predetermined quantity of grain, say one-half or a bushel, when exactly that amount is dis-

charged into the compartment B the weight of the grain overbalances the weight 24 and the hopper descends until it is arrested by the set-screw 36, secured by the lock-nut in the end 5 19 of the scale-beam, which is so adjusted as to allow the hopper to descend far enough for the end of the valve 30 to clear the recess 33. The side pressure of the loose grain then forces the lower end of the valve 30 over to the other 10 side of the discharge-opening 7, and consequently the upper end to the opposite side of the mouth 6 of the hopper, as is clearly shown in dotted lines in same figure. As before described, this movement of the hopper and 15 scale-beam registers on the tally-dial of the counter. In this position the bottom of the compartment A is closed and its mouth open, and as soon as the grain is discharged the weight 24 overbalances the hopper and it returns to its normal position with the valve in 20 the position shown in dotted lines and its upper end locked by the recess 34. The grain then falls into the compartment A until the hopper descends, when the same result takes 25 place as before described.

From this description it will be seen that in a very simple manner and without any additional cost the grain can be accurately measured while it is being transferred from one receptacle to another, and the device will also 30 be found very convenient in filling bags for shipment.

Although I have specifically described the construction and relative arrangement of the

several elements of my invention, I do not 35 desire to be confined to the same, as such changes or modifications may be made as clearly fall within the scope of my invention without departing from the spirit thereof.

Having thus fully described my invention, 40 what I claim as new and useful, and desire to secure by Letters Patent of the United States, is—

The elevator-chute 2, having the discharge-opening 3, the sides of which are provided 45 with the guide-brackets 29, 29 and the recesses 33, 34, the scale-beam 20 fulcrumed in a stationary bracket 22 rigidly secured to the top of the chute, and provided with the adjustable weight 24 and having the central 50 V-shaped bearing 18, in combination with the hopper 5, the oscillating valve 30, centrally pivoted in said hopper, the side bars 15 15 rigidly secured at their lower ends to the sides of said hopper and extending upwardly 55 through said guide-brackets 29, 29, and the cross-bar 16 connecting the upper ends of said side bars 15, 15 and provided with a central knife-edge bearing 17, resting upon the bearing 18 in the scale-beam 20, substantially as 60 and for the purpose set forth.

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

HARRY W. MOSIER.

Witnesses:

J. W. TALMAGE,
ED METCALF.