

A. McBRIDE.

Improvement in Grain-Meters.

No. 129,045.

Fig. 1.

Patented July 16, 1872.

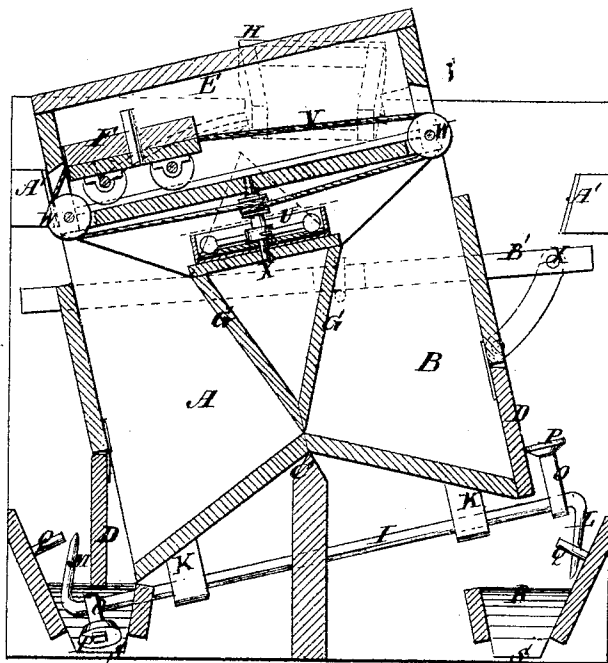
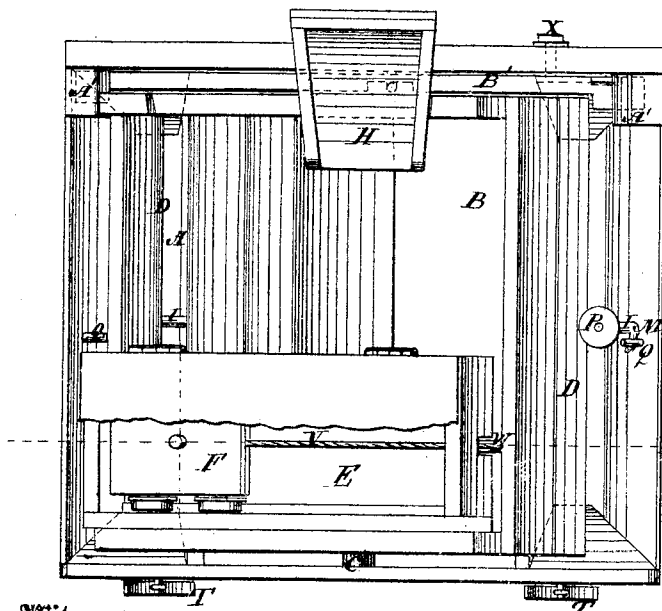
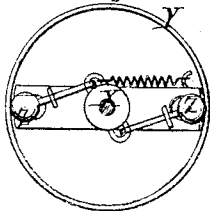


Fig. 2.



Witnesses:

Fig. 3.



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UNITED STATES PATENT OFFICE.

ARCHIBALD McBRIDE, OF FAYETTE, PENNSYLVANIA.

IMPROVEMENT IN GRAIN-METERS.

Specification forming part of Letters Patent No. 129,045, dated July 16, 1872.

Specification describing a new and Improved Automatic Grain-Weighing, Sacking, and Registering Apparatus, invented by ARCHIBALD McBRIDE, of Fayette, in the county of Allegheny and State of Pennsylvania.

My invention consists of a tilting hopper in two parts with a shifting weight; automatic opening and closing gates through which the hoppers are discharged; bag-holding spouts or hoppers; a shifting or moving bar for working a registering apparatus; and a regulator for controlling the movement of the weight, all combined and arranged as hereinafter described.

Figure 1 is a sectional elevation of my improved apparatus taken on the line *x x* of Fig. 2. Fig. 2 is partly a plan view and partly a horizontal section; and Fig. 3 is a top view of the regulating apparatus for controlling the speed of the shifting-weight.

Similar letters of reference indicate corresponding parts.

A and B represent two compartments of a tilting-box or hopper mounted on the knife-edge support C, with a hinged door, D, at the bottom of each compartment; a chamber, E, in the upper part, extending from side to side across the support C, in which is a weight, F, on trucks, capable of moving from one end to the other of the said compartment by its gravity when the hopper is tilted, and a partition, G, adapted to chute the grain, which falls from a spout, H, on its inclined sides, to the lowermost part of the compartments, the bottoms of which are inclined to discharge the grain through the sides when the doors D are open. Below the hopper is a shaft, I, mounted in supports K depending from the bottom of the hopper, which said shaft has a cranked arm, L, at each end, which projects beyond the door D, and between said arm and the door is another arm, O, with a wheel, P, on the end. These cranked arms L are so arranged that when the hopper rises the one on the rising side will come against a stop-pin, Q, and cause the shaft to turn a quarter of a revolution, or thereabout, and bring the roller P of that side up against the door D and close it fast, ready to receive the grain, and at the same time turn the roller P down away from the door on the other side, and allow it to open for discharging

the grain. R represents other hoppers into which the grain is discharged, and whereon the sacks for receiving the grain are fastened, the said sacks being fastened by stretching the mouths of the sacks around the projecting end pieces S, and hooking them upon hooks on the outer side of one and clamping them between spring-nippers T at the other end. In order to prevent the weight from rolling too fast and striking too heavy at the end of its movement, I have a governor or regulator, U, which I connect with it by the cord V, and winding on the spindle X; which said governor consists of the circular hoop Y and the balls Z, said balls being connected with the spindle and held by springs, so that they can move outward by centrifugal force and come against the hoop, and by their frictional contact therewith limit the motion. As represented in the drawing, the grain would fall into the compartment B until it contained a sufficient quantity to overbalance the weight F; then the slide B would tilt down, and the cranked arm M of shaft I, at the left side of the hopper, in rising would come in contact with the stop Q provided for it, which would cause wheel P on the right to turn down and allow the door of compartment B to open. At the same time the wheel P, at the left side, would come up against the door of compartment A and close it, and it would be filled, and in its turn tilt the box back to the position in which it is represented in the drawing.

The compartments may be large enough to hold a bagfull, but the weight will preferably be adjusted so as to allow the hopper to shift with each bushel.

For changing the machine for different kinds of grain not materially varying in weight, there may be adjustable stops in the compartment E for being set to arrest the weight nearer to, or further from, the perpendicular line of the axis, as the case may be, or the stops A', against which the case is arrested, may be shifted in like manner, which will have the same result; but for weighing grain differing materially in weight different weights F will be used.

B' represents a bar which I have applied to the hopper to break the force of the blows on the stops A' when said hopper tilts from one side to the other. It is made to act as a brake

by screwing it against the side of the case by the bolt X. This bar can also be used to actuate the pawl of a register.

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

The hopper A B, shifting-weight F, spout H, and bag-hoppers R, combined with mech-

anism I M O P Q, bar B', and governor V, when all are arranged as and for the purpose set forth.

ARCHIBALD McBRIDE.

Witnesses:

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