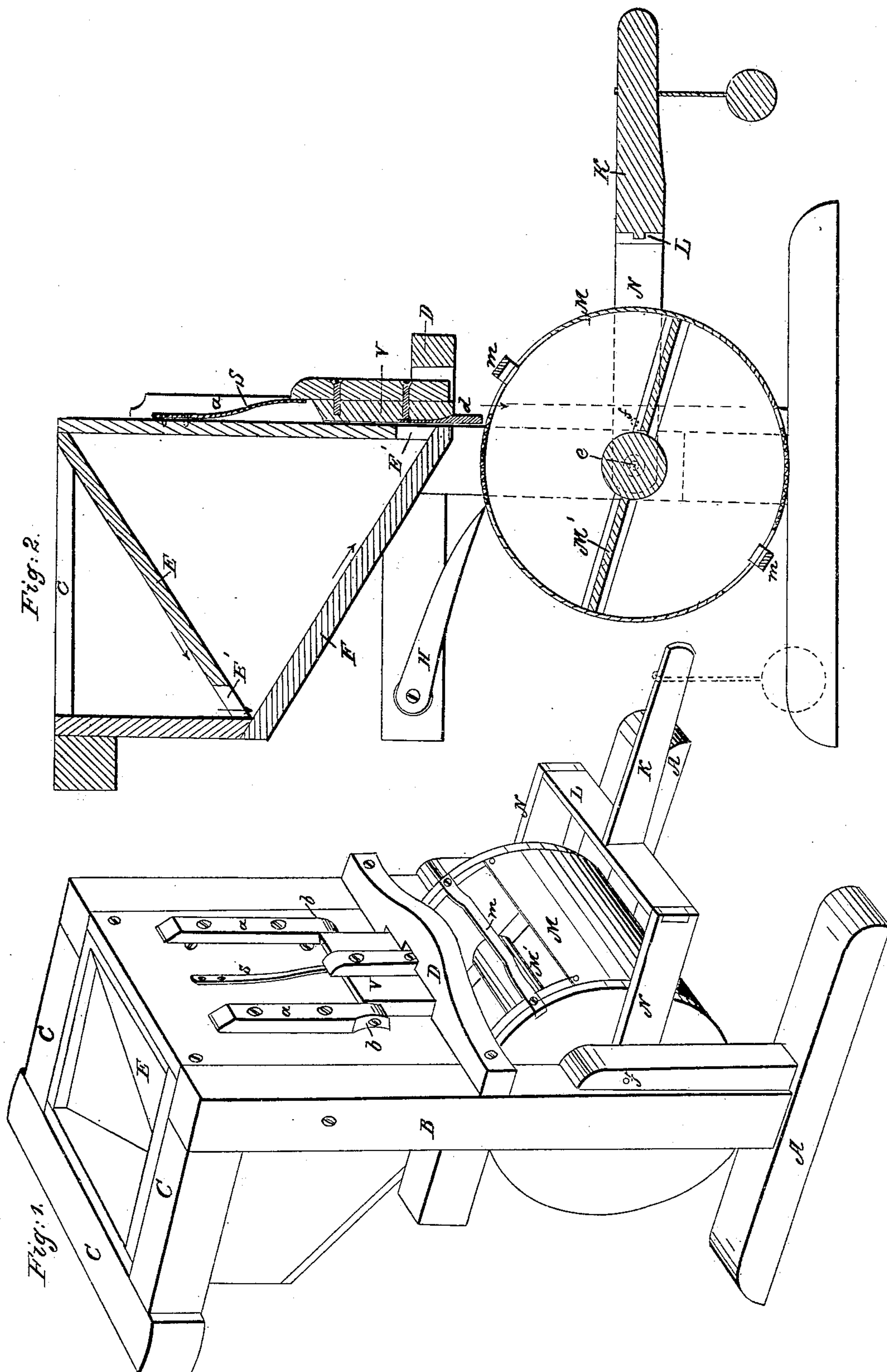


## Automatic Grain Scale.

Patented April 14, 1863.





# UNITED STATES PATENT OFFICE.

ANDREW STEVELEY, OF FOND DU LAC, WISCONSIN.

## IMPROVEMENT IN AUTOMATIC GRAIN-SCALES.

Specification forming part of Letters Patent No. 38,185, dated April 14, 1863.

*To all whom it may concern:*

Be it known that I, ANDREW STEVELEY, of Fond du Lac, in the county of Fond du Lac and State of Wisconsin, have invented a new and useful Improvement in Automatic Grain-Scales; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters and figures marked thereon, which form part of this specification.

In said drawings, Figure 1 represents a view in perspective of my invention, and Fig. 2 a longitudinal vertical section through the center thereof.

My invention consists in having a revolving cylindrical scale arranged below a hopper, through which the grain passes, in such a manner that the grain may fall into said scale, and that upon receiving a given weight the scale will revolve about so as to discharge the grain already weighed and prepare for another supply.

It also consists in an arrangement whereby the eduction pipe or passage from the hopper is closed simultaneously with the revolution of the scale aforesaid, so that no grain can escape until the scale is in the proper position to receive it.

It further consists in having the hopper aforesaid constructed with two bottoms, so arranged as to avoid having the weight of the grain in the hopper press against the eduction-valve aforesaid with such force as to interfere with the closing of the same, as above described.

To enable others skilled in the art to understand the construction and operation of my invention, I will now proceed to describe the same with particularity.

A B C represent the frame-work of my improved grain scale, which is constructed of timbers of suitable size and put together substantially as shown in the drawings, the shoes A A forming the case or support upon which the whole stands. The upper part of structure consists of the hopper, whereby the grain is introduced into the scale, which is provided with two chutes or bottoms, (marked E and F in the drawings,) E sloping toward the back, precipitating the grain through the narrow opening E' upon the chute F, which inclines toward the front, down which the grain passes to go out at the opening F', which is regu-

lated by the valve V. The object of this arrangement of the two chutes in the hopper is to prevent the weight of the grain in bulk from pressing against the valve V, which controls the egress of the grain and impeding its free operation, as hereinafter described.

a a represent two blocks, which are attached to the front part of the hopper on the outside thereof, as shown in the drawings, by screws or otherwise, and between the lower ends thereof, and suspended therefrom by means of the pivots b b is the valve V, which opens outward upon pressure being applied, turning upon the pivots b b as upon a hinge, but when freed from pressure it is kept by its own weight and the action of the spring s closely against the opening F', thereby preventing the egress of the grain. The spring s need only be of sufficient force to shut back the grain, and owing to the arrangement of the two chutes in the hopper the pressure to be overcome is very slight. Across the frame-work, at the lower end of the valve V, is placed the bar D, which is provided with an opening corresponding to the configuration of the valve, by means of which opening the valve, when pressed open to allow the grain to flow out, rests against the said bar D, which forms a support for said valve to prevent its yielding farther than necessary away from the opening F'.

Directly beneath the opening F' is arranged a horizontal cylindrical scale, (marked M.) This scale is closed at the ends, and is divided into two equal longitudinal compartments by a partition passing horizontally through it corresponding to the plane of the diameter thereof. This partition is marked M' in Fig. 2. In the two sides of this cylinder opposite the said partition, longitudinal openings are made equal in length with the cylinder, and of sufficient width to receive the grain readily falling from the hopper. This cylindrical scale is provided at the center of each end with gudgeons, which pass through bearings in the ends of the bars N. These bars N are connected, as shown in the drawings, by the cross-bar L, which is provided with the weighing-arm K, upon which the poise P is adjusted. At a suitable distance from the bearings which support the gudgeons e the bars N are supported upon the fulcrum f, the distance between e and f forming the short arm of the



scale, and the distance between *f* and P forming the long arm thereof. From the lower end of the valve V projects downward the pin *d*, and longitudinally across the aforesaid openings in the cylindrical scale extend the bars *m*. Instead of this arrangement, the pin may be attached to the ends of the cylinder, projecting upward, and the bar be fixed to the lower end of the valve V, being of sufficient length to reach the said pins. To prevent the cylinder from revolving in the reverse direction, the ends of the same are provided with teeth or eyes, into which the dog H enters, thereby preventing such reverse motion of the scale.

The operation of my invention is as follows: The poise P is first adjusted for the desired weight. When the scale, being empty, rises up so that upon being revolved in the desired direction (namely to the right) and to the proper position, the bar *m* will press against the pin *d* and open the valve V. When the grain begins to flow from the hopper into one of the compartments of the cylindrical scale, and from the direction of the stream of grain, it tends to accumulate in the front side of the compartment. As the grain gradually fills the scale the scale gradually sinks down, and when the given weight to which the scale had been previously adjusted has entered the scale it sinks so low that the bars *m* slips from the pin *d*,

and from the accumulation of grain on one side of the scale the scale immediately revolves and discharges the grain. At the same time, as soon as the pressure of the bar *m* is removed from the pin *d*, the valve V closes and prevents the egress of the grain until the opposite compartment comes into proper position, when the corresponding bar, *m*, again opens the valve and the same operation is continued until the grain has all been weighed.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The arrangement of the chutes E and F in the hopper, substantially as and for the purposes herein specified.

2. The arrangement of the valve V, provided with the pin *d*, or its equivalent, and the bar *m*, when used in connection with a revolving scale, and constructed and operating substantially as and for the purposes delineated and set forth.

3. The employment for the purposes herein specified of a revolving scale, M, constructed and operating substantially as herein set forth and described.

ANDREW STEVELEY.

Witnesses:

W. E. MARRS,  
J. L. WELLS.