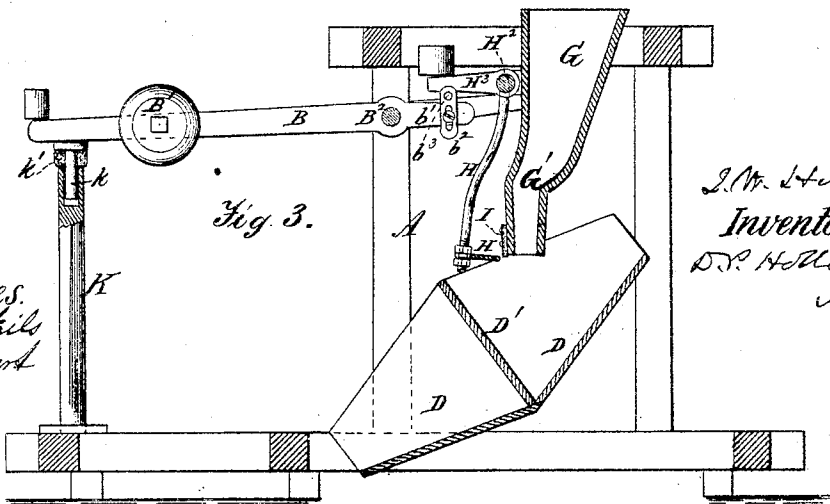
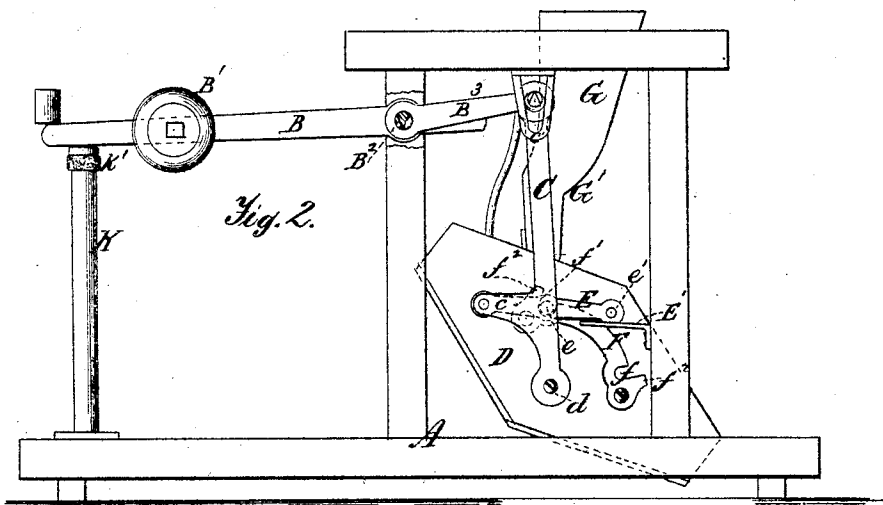
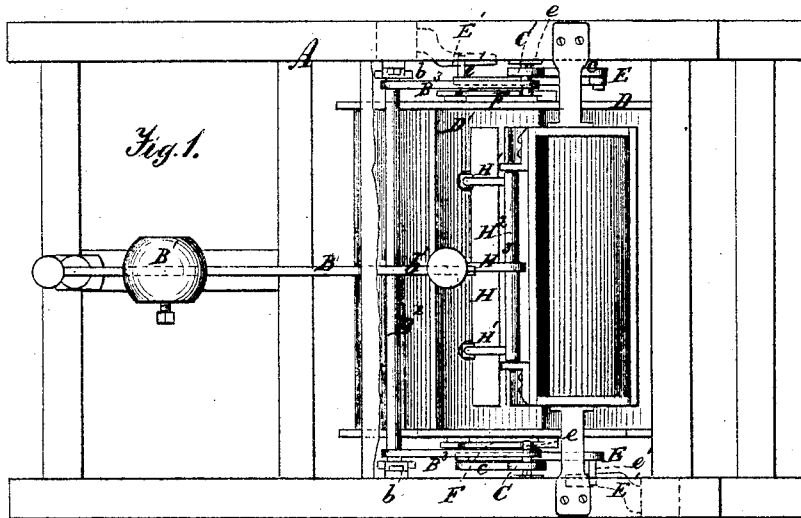


J. W. HILL.
Automatic Grain Weighers.

No. 137,921.

Patented April 15, 1873.



Witnesses.
R. L. Gills
A. Ruppert

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UNITED STATES PATENT OFFICE.

JOHN W. HILL, OF DAYTON, OHIO.

IMPROVEMENT IN AUTOMATIC GRAIN-WEIGHERS.

Specification forming part of Letters Patent No. **137,921**, dated April 15, 1873; application filed June 3, 1872.

To all whom it may concern:

Be it known that I, JOHN W. HILL, residing at Dayton, in the county of Montgomery and State of Ohio, have invented certain Improvements in Automatic Grain-Weighers, of which the following is a specification:

The nature of my invention consists in the employment of an oscillating scale or dish, in the form of a trough centrally divided, in combination with devices for holding the dish in position for the reception of grain alternately in each of its compartments, and for causing its automatic oscillation every time the desired quantity of grain has been weighed.

Figure 1 represents a plan view of my improved machine. Fig. 2 is a side elevation of the same. Fig. 3 is a longitudinal sectional elevation.

The same letters of reference are used in all the figures in the designation of identical parts.

The various operating parts of the machine are mounted upon a convenient frame-work, A, which is provided with a suitable opening in its base beneath the scale of the balance to permit of its oscillations and the discharge of the grain. The long arm B of the beam of the balance carries the usual adjustable sliding weight, B¹, and is secured firmly to the shaft B², which terminates at each end in a knife-edge, resting in bearings b on the side timbers of the frame. Near each end of this shaft is fastened an arm, B³, extending in an opposite direction to that of the arm B, and constituting the short arms of the beam. Each arm B³ is provided with a laterally-projecting knife-edge near its outer end, from which the suspension-rods C and C' are suspended. The dish or pan D is hung between these suspension-rods, the lower ends of which are pivoted to projecting studs d on the pan. The latter has a double-inclined bottom, open ends, and a central partition, D', dividing it into two compartments, which are used alternately for weighing the desired quantity of grain. The pan is held steady between the suspension-rods, until it has received the weight of grain required, either in the position shown in Fig. 2 or that illustrated in Fig. 3, by means of detents E on the suspension-rods and catches F on the pan. The detents consist each of a le-

ver, which is pivoted at one end to a projecting arm, e, of the suspension-rods, and has projecting from it about midway of its length a stud, e, which engages automatically either with the notch f or the notch f¹ of the corresponding catch F, according to the position of the pan, by falling into the same by gravitation. The extreme free end of each detent is provided with an outwardly-projecting stud, e', overhanging a fixed bracket, E', on the frame, with which it comes in contact on the descent of the pan, whereby the detent is lifted so as to elevate its stud e out of the notch of the catch. The moment this is accomplished the pan is oscillated by the weight of the grain in one of its compartments, and, the grain being discharged, the pan is at once borne up by the beam, whereby the studs e' of the detents are elevated above the brackets E', so as to allow the detents to swing downward to cause their studs e to fall into the other notches of the catches F. The latter are made of sectoral form, and have an upwardly-projecting shoulder, f², on the outer side of each notch for the purpose of limiting the oscillation of the pan. The descending movement of the pan is limited by stirrups e', in which the knife-edges on the short arms of the beam move, and is just sufficient to cause the release of the detents from the notches of the catches at the proper times. Without some means for checking this descending motion of the pan, it might descend so far as to lift the studs e of the detents above the shoulders f² on the catches, and thus interfere with the proper action of the machine. The grain is received in a hopper, G, above the oscillating pan. The spout G' of the hopper is curved, as shown, for the purpose of reducing the momentum of the moving grain to a minimum. The open end of the spout is controlled by a cut-off, H, fastened to the rods H¹ H¹, which in turn are secured to a rock-shaft, H², turning in bearings on the hopper. The rock-shaft carries a weighted arm, H³, the outer end of which rests upon a stud, b³, on the standard b², which is adjustably secured to an elongation, b¹, of the arm B. As the beam is turned by the weight of the grain in the dish or pan, the cut-off is moved under the spout by the action of the weighted arm H³, stopping the

flow of the grain during the oscillation of the pan; and on the descent of the arm B the cut-off is drawn back from under the spout by the action of the elongation or arm b^1 upon such weighted arm H^2 . The cut-off is adjustably secured to the rods H^1 for vertical adjustment, and its throw is regulated by the adjustable standard b^2 to adapt it for operating in different kinds of grain and seeds. A scraper, I, consisting of a strip of leather, India rubber, or a brush, is used to scrape off from the cut-off any grain or seeds as it is withdrawn. The downward movement of the arm B of the beam is limited by the post K, which may be provided with a pin, k , on top, resting with its head upon an elastic cushion, k' , to take up the shock as the beam comes down on the pin.

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

1. The combination of the oscillating pan hung upon the suspension-rods C C' of the beam of the balance, fixed catches on said pan, gravitating detents on the suspension-rods, and fixed brackets F, substantially as specified.

2. In combination with the foregoing elements, the stirrups c' and the shoulders f^2 on the catches, substantially as and for the purposes set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN W. HILL.

Witnesses:

D. P. HOLLOWAY,
B. EDW. J. EILS.