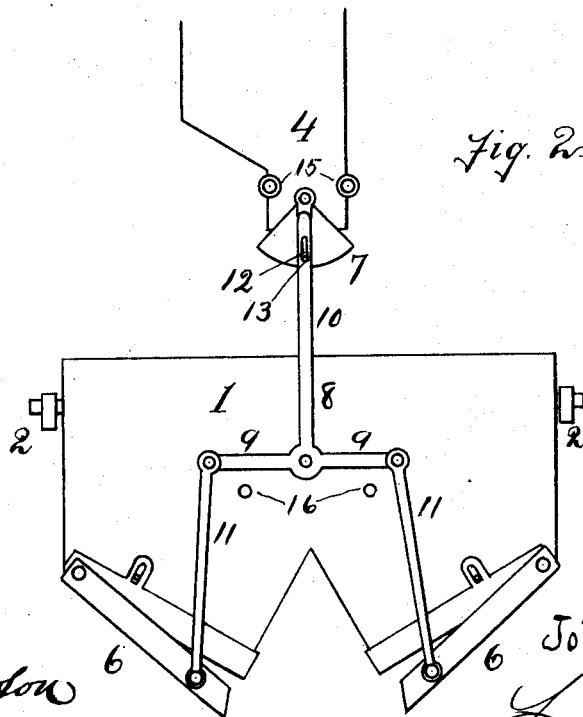
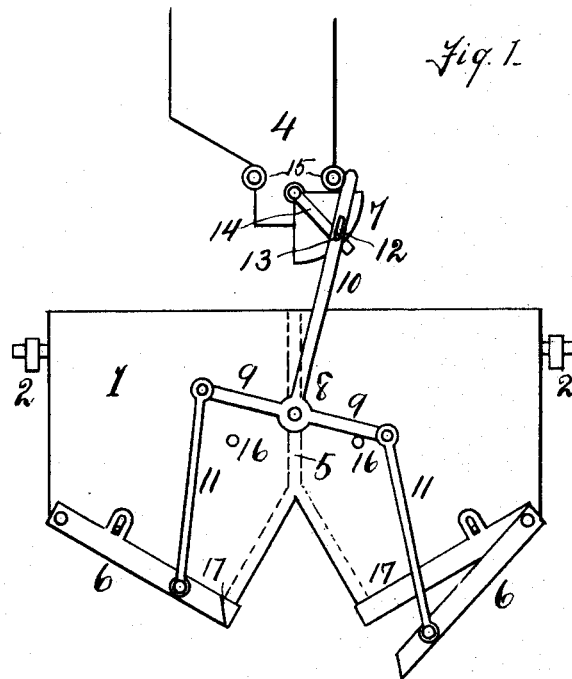


(No Model.)

J. HENRY.
AUTOMATIC GRAIN WEIGHER.

No. 419,948.

Patented Jan. 21, 1890.



Witnesses.

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UNITED STATES PATENT OFFICE.

JOHN HENRY, OF ARDOCH, (DAKOTA TERRITORY,) NORTH DAKOTA, ASSIGNOR OF ONE-HALF TO JOHN GEORGE NEILSON, OF SAME PLACE.

AUTOMATIC GRAIN-WEIGHER.

SPECIFICATION forming part of Letters Patent No. 419,948, dated January 21, 1890.

Application filed April 10, 1889. Serial No. 306,744. (No model.)

To all whom it may concern:

Be it known that I, JOHN HENRY, a citizen of the United States, residing at Ardoch, in the county of Walsh and Territory of Dakota, have invented certain new and useful Improvements in Automatic Grain-Weighers; 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, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

This invention relates to apparatus for automatically weighing grain in the course of its removal from one receptacle to another, as in mills, or in loading cars or vessels from elevators, or in any similar position; and it consists in a modification of the apparatus described in my application for Letters Patent of even date herewith, Serial No. 306,743, for automatic grain-weighers. The modification herein described relates particularly to the means employed, in connection with the valves covering the discharge-apertures of the receiver, for controlling the cut-off, by means of which the supply of grain from the supply-spout is directed into the compartment of the receiver whose discharge-valve is closed, and in the means employed for retaining the valve closed and the cut-off in proper position until the scale-beam tips from the weight of the contents of the receiver.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 is a front view of the apparatus, showing the receiver elevated in position for filling; Fig. 2, a similar view showing the receiver lowered.

The receiver 1 is pivotally suspended between the arms of a forked scale-beam 2, fulcrumed upon any suitable standard or support in such a manner as to tilt when the weight of the contents of the receiver overbalances the scale-weight. The position of the receiver is directly underneath the mouth of the supply-spout 4, and it is divided into two parts by a partition 5, extending from front to back under the center of the supply-spout,

as shown in dotted lines in the drawings. The bottom of each compartment slopes toward the partition, and is formed in each case by a valve 6, hinged at its outer edge to the receiver in such a manner as to swing outwardly by the weight of the contents of the receiver. To the mouth of the supply-spout is attached a cut-off 7, having segment-shaped ends and curved bottom. It is attached to the spout by means of pivots passing through the segment-shaped ends at or near the center of curvature of the bottom in such a manner as to swing freely back and forth across the mouth of the spout, and acting as a chute to direct the supply of grain to either side of the partition of the receiver, accordingly as it is swung to one side or the other of the spout, the axis upon which it turns being vertically over and parallel to the said partition.

Upon one or both ends of the receiver, its axis lying in the plane of the partition, is pivoted a T-shaped lever 8, having arms 9 9, extending horizontally in either direction from the pivotal point, and a third arm 10, extending upwardly at right angles from the same point. To the ends of the arms 9 9 are attached rods 11 11, respectively connected with the valves 6 6 upon the same side of the middle of the receiver, so that as one valve opens, turning the lever upon its pivot, the other valve is closed, at the same time swinging the upright arm to the right or left. In the upper part of the said arm is formed a longitudinal slot 12, through which passes a pin 13 upon a radial arm 14, permanently attached to the cut-off. As the arm 10 swings from one side to the other the cut-off is turned upon its pivot to one side of the spout in such a manner as to direct the supply from the spout into the side of the receiver whose valve is closed. The valves thus automatically operating the cut-off, it is impossible for any grain to be discharged into either compartment when its valve is open, and the supply is at once turned into the closed compartment without any cessation of the flow.

To control the valves so that the valve of the compartment that is being filled shall remain closed until the desired quantity of grain shall have been admitted, stops 15 15

are located upon the supply-spout in such a position that as the receiver rises after discharging the contents of one side of the receiver the arm 10 rises and is held outside of one of the stops. The weight exerted by the contents of the compartment that is being filled is expended against the stop until the contents outweighs the scale-weight. The receiver then lowers, releasing the arm 10 from the stop, allowing the valve to open and at the same time closing the other valve and bringing the arm 10 into position to be engaged by the other stop upon the opposite side of the spout. The cut-off being turned at the same time toward the other compartment, the operation is kept up as long as the supply of grain is continued.

The stops 15 15 are preferably formed of friction-sheaves to avoid, as far as may be, any hinderance to the complete rising of the receiver after discharging. Stops 16 16 upon the sides of the receiver limit the downward movement of the arms 9 9, and consequently restrict the opening of the valves beyond a certain limit.

A guard 17, constructed and actuated in a manner similar to that described in my herebefore-mentioned application, may also be used with this construction, the guard being connected to the opposite arm from that to which the valve of the same compartment is attached.

I claim as my invention—

1. In a grain-weigher, the receiver having two compartments, hinged valves normally closing the same and adapted to swing outwardly by the weight of the contents of the

compartment, a lever having its opposite arms connected, respectively, with the said valves, whereby as one valve opens the other is closed, a cut-off on the supply-spout adapted to swing to direct the supply into either compartment, and arm 10, rigidly attached to or forming a part of said lever and connected with said cut-off, whereby the rocking of said lever by the opening of one valve closes the other valve and directs the cut-off toward the closed compartment, substantially as and for the purpose herein specified.

2. In a grain-weigher, a receiver having two compartments, hinged valves closing the discharge-apertures of each compartment and adapted to open by the weight of the contents of the same, a rock-lever pivoted at its center to the side of said receiver, having its opposite arms respectively connected with said swinging valves, an arm extending upwardly from the pivotal point of said lever and turning therewith, having a longitudinal slot in the upper part thereof, a swinging cut-off having a pin therein passing through said slot, the said receiver being pivotally suspended between the arms of a forked scale-beam, and stops adapted to engage said arm and prevent the rocking of said lever and the opening of the closed valve when the receiver is raised, substantially as and for the purpose herein specified.

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

JOHN HENRY.

Witnesses:

W. T. SHEPPARD,
GEORGE LATRACE.