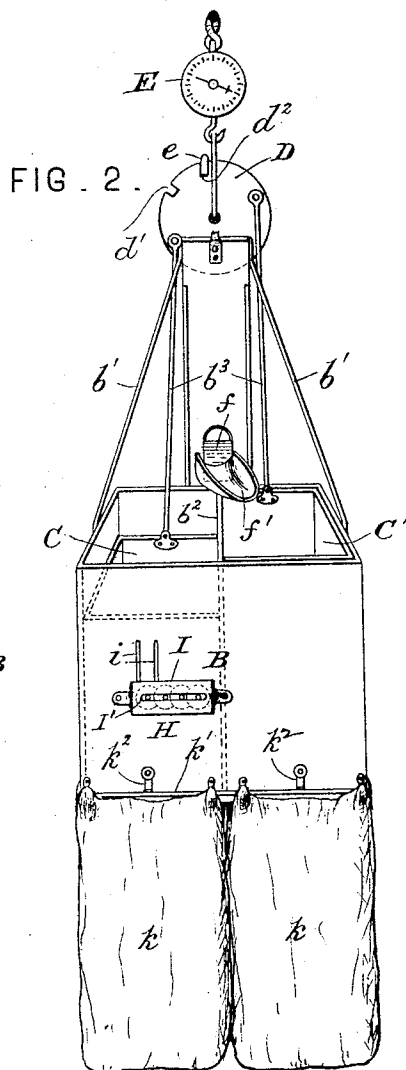
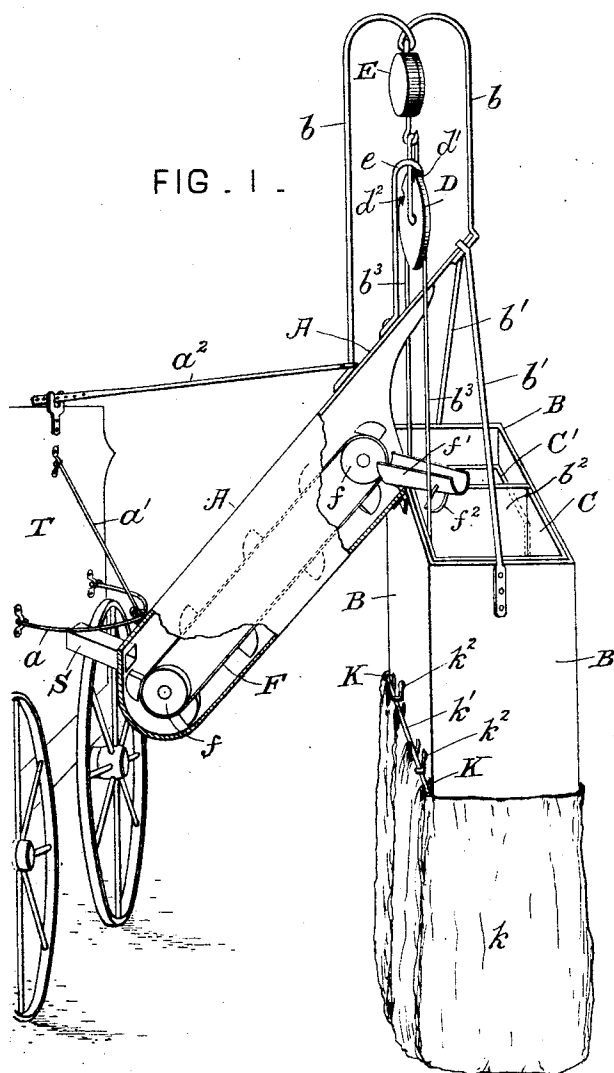


2 Sheets—Sheet 1.

No. 460,577.

Patented Oct. 6, 1891.



Attest:

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B. P. Mahoney.

Inventor:

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augs?

(No Model.)

2 Sheets—Sheet 2.

J. HALLAHAN.
GRAIN MEASURER.

No. 460,577.

Patented Oct. 6, 1891.

FIG. 3.

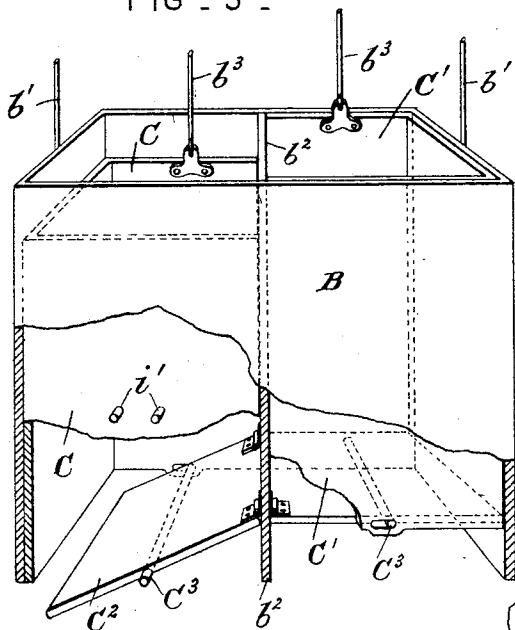


FIG. 4.

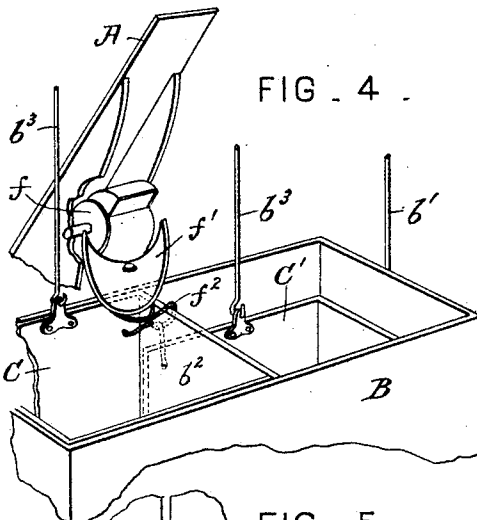


FIG. 5.

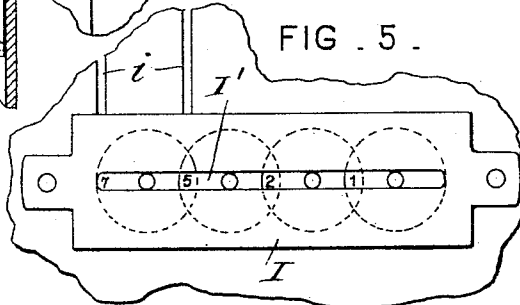


FIG. 8.

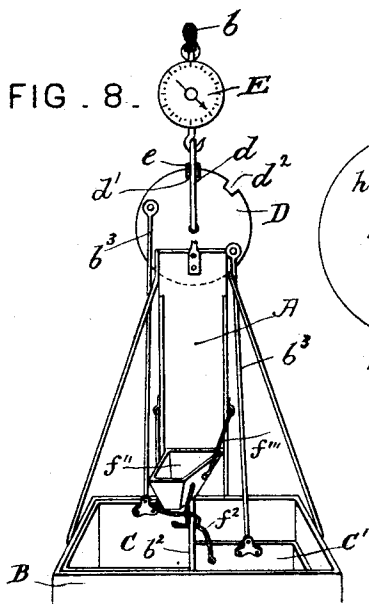


FIG. 6.

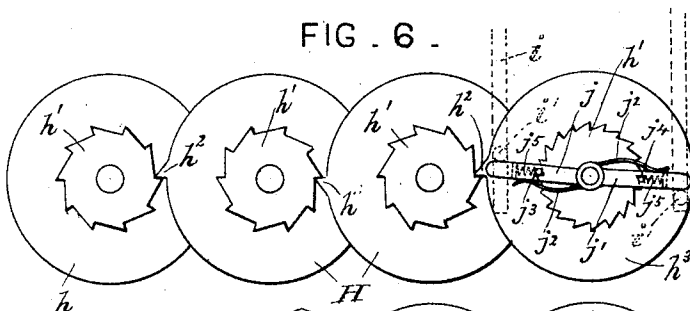
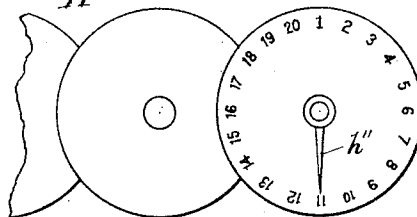


FIG. 7.



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UNITED STATES PATENT OFFICE.

JOHN HALLAHAN, OF DUBUQUE, IOWA.

GRAIN-MEASURER.

SPECIFICATION forming part of Letters Patent No. 460,577, dated October 6, 1891.

Application filed January 26, 1891. Serial No. 379,115. (No model.)

To all whom it may concern:

Be it known that I, JOHN HALLAHAN, a citizen of the United States, residing at Dubuque, in the county of Dubuque and State of Iowa, have invented certain new and useful Improvements in Grain-Measurers; and I do hereby 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 letters of reference marked thereon, which form a part of this specification.

This invention relates to a new and improved grain-meter, having for its object the production of simple and highly-efficient means by which the grain from a single discharge-spout of a thrashing-machine can be alternately fed to alternately-operating bins or measures which are automatically lowered at a predetermined weight, a record or tally being kept of the quantity of grain so measured or weighed.

A further object of the invention is to provide simple and efficient means for securing bags or sacks beneath each bin or measure.

To these ends the invention comprises the detail construction, combination, and arrangement of parts, substantially as herein-after fully set forth, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a view in perspective of my improved grain-meter. Fig. 2 is a similar view, looking to the front, with parts broken away. Fig. 3 is a view showing the bins or measures and their pivoted bottoms. Fig. 4 is a view of the movable supply-spout. Fig. 5 is a view of the tally. Figs. 6 and 7 are enlarged detail views thereof. Fig. 8 is a detail view showing a modified form of supply spout or trough.

Referring to the drawings, A designates a frame or support, and a a semicircular rod attached at its ends to the side of a thrasher T, and to which the said frame is secured at its lower end, so as to be adjustable from one side to the other.

a' is a sustaining-rod secured at its inner end to thrasher T and at its other end to the lower end of frame A, and a^2 is a second rod

arranged to permit the adjustment or drawing up or lowering of the said frame in relation to the thrasher. From the latter projects a discharge-spout S, designed to extend into the frame A.

To the upper outer end of frame A are secured the ends of an approximately U-shaped bar b , to the lower end of which is secured the outer end of rod a^2 , which supports the outer end of the frame.

B is an approximately oblong box or casing, which is suspended by arms b' from the upper end of frame A, said box or casing being open at its ends and provided with a central vertical partition b^2 . In this box or casing are two bins or measures C C', which consist each of a pivoted or inclinable bottom C² and two parallel boards connected at one side only, the partition b^2 serving to close the open side of each bin as the latter is being filled. The bottom C² of each bin or measure is hinged at its inner end to the vertical partition b^2 , and at about its center it is provided with a transverse rod C³, secured at its ends to the parallel side boards of each bin. Under this arrangement the bottom C² is held closed when the bin is used for filling, but inclines outwardly at its free end on the descent of such bin, thus discharging the grain. To each bin is secured a connecting-rod b^3 , which rods at their upper ends are secured to opposite points of a disk D, which disk is centrally hung, so as to be free to revolve by a loop d , suspended from a weight-scale E, secured to the U-shaped bar b . In this disk are formed two grooves or slots d' d^2 , wherein is designed to fit the bent end of a stop-arm e , secured to frame A. The said grooves or slots are preferably made as shown in Fig. 8, so that the stop-arm e stops the movement of the disk exactly on its center.

F is an elevator-belt located or inclosed in frame A, and is provided with a series of buckets for conveying the grain. This belt is passed around pulleys f , and motion is imparted thereto in any preferred manner. A discharge supply-spout f' is pivotally secured to the upper end of frame A beneath belt F, and its outer end is designed to extend over either bin or measure, so as to supply grain thereto, said spout being automatically moved from one bin to the other as the bin last filled is lowered. This is effected by connecting to

each bin one end of a cord f^2 , which is passed through a hole or aperture in the partition b^2 and is brought up over the end of said partition and connected to the spout on the same side as the bin, to which its other end is secured. In this manner the lowering of either bin will move the spout over the other empty bin. In lieu of this spout I may employ a trough f''' , having an open bottom and flaring sides, said trough being secured to the upper end of frame A by loosely-attached rods f''' .

From what has been said it will be seen that as the grain is supplied to, say, the bin C' the arm e is in engagement with the groove or slot d^2 . (See Fig. 2.) When said bin has received its full quota of grain, which is preferably about one half bushel, the scales will permit the bins to lower, and when the disk is released from arm e it will turn on its pivot, causing the bin C' to lower and discharge its contents at its lower end. By the time the groove or slot d' is coincident with arm e sufficient grain will have been emptied from bin C' to permit the elevation of the disk and cause the engagement of the arm e with said latter groove or slot. Grain is now being supplied to the outer bin C, the discharge-spout having been moved thereover by the lowering of bin C'. When bin C is full, the above operation is repeated.

In Figs. 2, 5, 6, and 7 I have shown means for registering or recording the operation of each bin, and in this manner an accurate record or tally is kept of the number of bushels or half-bushels weighed or measured. This registering mechanism consists of a series of disks H, to each of which is secured a ratchet-wheel h' , having each (save the final or outer disk h) a finger or projection h^2 , which is designed to engage the next higher wheel at each complete revolution. The disks are inclosed by a metallic frame I, having a central longitudinal slot I' for viewing the numbers on the disks and reading the register. In the front of box or casing B are formed parallel slots i , through which project short studs i' of one of the bins or measures, (say bin C,) said studs being designed to effect the movement of the first disk h^3 of the series and cause the same to turn one point at each lowering and raising of the bin or measure C. The disk h^3 will in turn cause the revolution of the next disk at one complete revolution, and so on throughout the series of disks, said disk h^3 being preferably numbered from one (1) to twenty, (20.) In this manner the exact quantity of grain measured can be readily ascertained and an accurate record maintained. The stud or shaft of the disk h^3 has loosely secured thereon the inner ends of two bars or levers j, j' , with the outer ends of which the studs i' are designed to engage. To the stud or shaft are secured the inner ends of upper and lower spring-arms j^2 , which at their outer free ends bear on the upper and lower edges of said bars or levers j, j' . To these bars or levers are movably secured studs or pins j^3, j^4 ,

which engage the ratchet-wheel h' , and are allowed to slide upon the outer edge of the teeth by coil-springs j^5 , secured thereto and to the bars or levers. As the bin lowers the bar or lever j , through its stud or pin j^3 , moves ratchet-wheel h' one point, which will move the disk h^3 one point, so that one half bushel will be indicated on the outer face of said disk, the pointer h'' pointing between the numbers thereon. When the bin moves upward, the bar or lever j' is raised and its stud or pin j^4 engages and moves ratchet-wheel h' the extent of one tooth. This upward movement serves to record the corresponding downward movement of the other bin C'.

To the lower end of box or casing B, beneath each bin, are four (more or less) hooks K, upon which the bags k are hung to receive the grain. A rod k' extends across from hook to hook upon each side over the ends of the bags thus held, and the pivoted right-angled arms k^2 , projecting from and attached, one on each side of each bin, to the box or casing B, are designed to close said rods down over each set of hooks outside of said box or casing to hold the bag on said hooks by bearing on said rods.

I claim as my invention—

1. In a grain-measure, the box or casing having a central vertical partition, and two alternately-moving bins or measures located in said box or casing and having inner opposite open sides, as and for the purpose set forth.

2. In a grain-measure, the box or casing having a central vertical partition, and two bins or measures having three sides and pivoted or inclined bottoms, the inner opposite sides of said bins or measures being open, as set forth.

3. In a grain-measure, the box or casing having a central partition provided with a hole or aperture, the alternately-moving bins or measures, the pivoted feed-spout, and the cords connected to said bins or measures and passed through said hole or aperture and connected to said spout at opposite sides, as and for the purpose set forth.

4. In a grain-measure, the alternately-moving bins or measures, the pivoted disk having limited movements, the rods connecting said bins or measures to said disk, and the yielding support for said disk, substantially as set forth.

5. In a grain-measure, the alternately-moving bins or measures, the pivoted disk having two grooves or slots, the arm designed to engage therewith, the rods connected to said bins or measures and to said disk, and the yielding scales from which said disk is suspended, substantially as set forth.

6. The combination, with the box or casing having a central partition, of the bins or measures alternately moving therein, and the bottoms pivotally secured to said partition and having cross-rods secured to the sides of said bins or measures, as set forth.

7. The combination, with the box or casing having slots therein, of the bin or measure having studs extended through said slots, the tally or registering device comprising a series of recording-disks, and the bars or levers with which said studs are designed to engage, substantially as set forth.

8. The combination, with the box or casing having slots therein, of the bin or measure having studs extended through said slots, the tally or registering device comprising a series of recording-disks having ratchet-wheels, the bars or levers secured on the shaft of the first one of said disks and having pins or studs engaging the ratchet-wheel thereof, and the springs bearing on said bars or levers, substantially as set forth.

9. The combination, with the box or casing having slots therein, of the bin or measure having studs, the tally or registering device comprising a series of recording-disks having ratchet-wheels, the pivoted bars or levers hav-

ing yielding pins or studs engaging the ratchet-wheel of one of said disks, and the springs connected to said pins or studs and to said bars or levers, substantially as set forth.

10. The combination, with the box or casing having hooks on its lower ends, of the rods designed to close down on said hooks to hold a bag thereon and the bent pivoted arms for holding said rods, substantially as set forth.

11. The combination, with a thrasher having a semicircular rod, of the frame or support loosely secured thereto at its lower end, the adjustable rod attached to the upper end of said frame or support, the bins or measures, and the elevator in said frame or support, substantially as set forth.

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

JOHN HALLAHAN.

Witnesses:

JAMES PLAISTER,
ALEX. SIMPLOT.