

(No Model.)

2 Sheets—Sheet 1.

G. ANDERSON.
GRAIN WEIGHER.

No. 523,191.

Patented July 17, 1894.

Fig. 1.

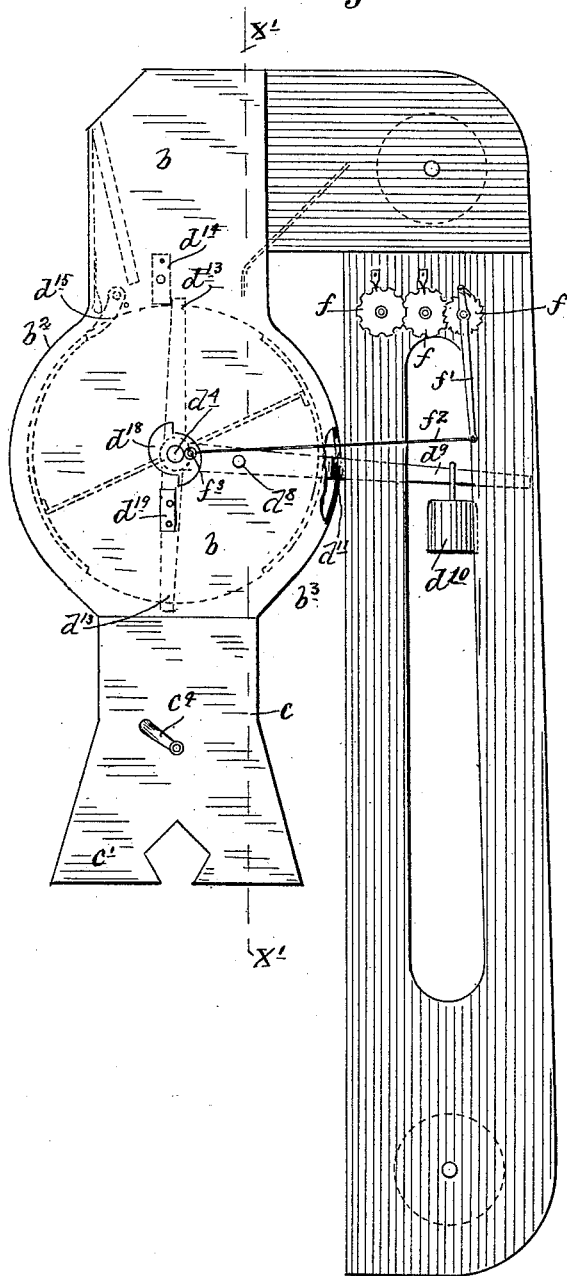
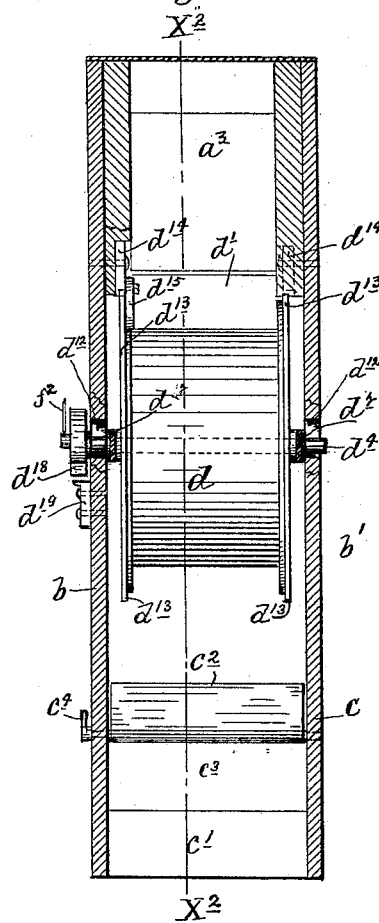


Fig. 2.



Witnesses.
a. 26. Opsahl.
Frank D. Merchant.

Inventor.
Gustav Anderson
By his Attorney.
Jas. F. Williamson

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Fig. 3.

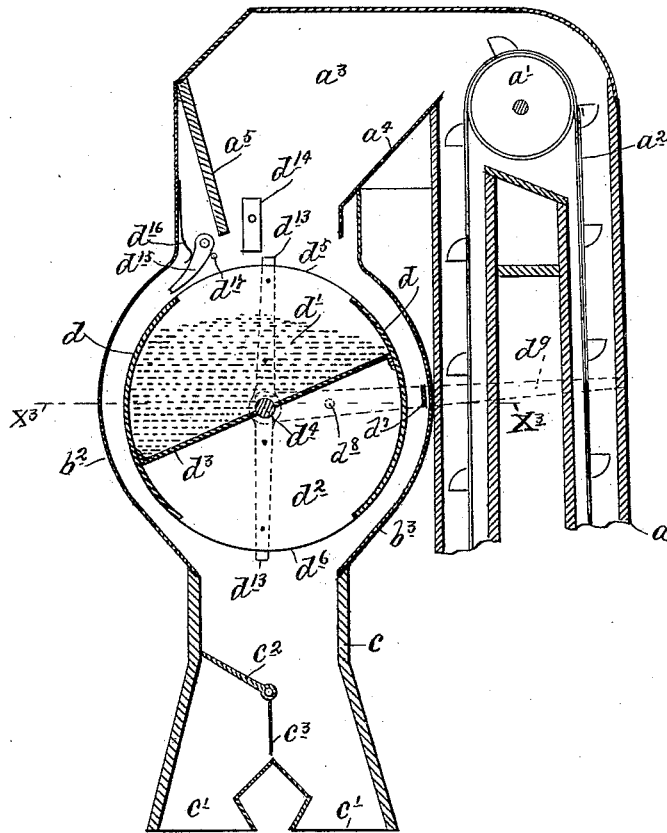
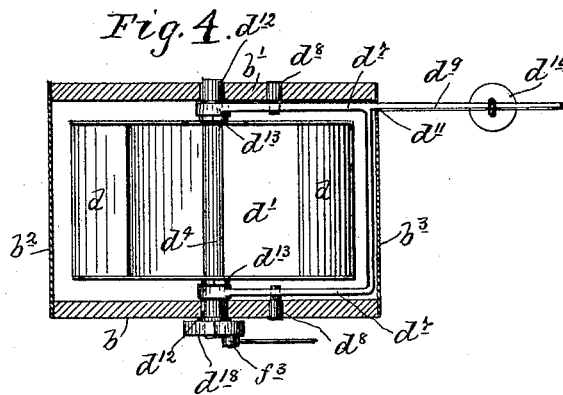


Fig. 4. d^{12}
(21)



Witnesses.
a. H. Opsahl.
Frank Merchant,

Inventor.
Gustav. Anderson
By his Attorney.
Geo. F. Williamson

UNITED STATES PATENT OFFICE.

GUSTAV ANDERSON, OF WELLS, ASSIGNOR TO THE MINNEAPOLIS THRESHING MACHINE COMPANY, OF MINNEAPOLIS, MINNESOTA.

GRAIN-WEIGHER.

SPECIFICATION forming part of Letters Patent No. 523,191, dated July 17, 1894.

Application filed February 26, 1894. Serial No. 501,492. (No model.)

To all whom it may concern:

Be it known that I, GUSTAV ANDERSON, a citizen of the United States, residing at Wells, in the county of Faribault and State of Minnesota, have invented certain new and useful Improvements in Grain-Weighers; 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.

My invention relates to grain-weighers; and is in the nature of an improvement on the constructions shown and described in my patents, Nos. 513,699 and 513,700, of date January 30, 1894.

The invention consists in certain novel devices and combinations of devices, which will be hereinafter fully described and be defined in the claims.

In the accompanying drawings, like letters referring to like parts,—Figure 1 is a front elevation of my improved machine. Fig. 2 is a vertical section, on the line X' X', of Fig. 1, looking from the right. Fig. 3 is a vertical section, from right to left, through the entire machine, on the line X² X², of Fig. 2, with some parts broken away, looking from the front; and Fig. 4 is a horizontal section, through the entire weigher, on the line X³ X³, of Fig. 3, the elevator being removed.

The elevator *a a'*, *a*² with its hood *a*³ and deflecting throat boards *a*⁴ *a*⁵; the weigher casing *b b'* *b*² *b*³; and the bagger *c c'* *c*² *c*³ *c*⁴;—are all substantially identical with the constructions shown and described in my above identified prior patents.

Turning now to my improvements, I mount within the said casing a rotary grain receptacle *d d'* *d*² *d*³ *d*⁴, of which parts *d* represents the shell or body, *d'* *d*² the pair of compartments into which the said body is divided by a central partition *d*³, and *d*⁴ the central shaft to which all the said parts are rigidly secured. The said compartments *d'* and *d*² are provided with peripheral openings, as shown at *d*⁵ *d*⁶, located in alternate quarters of the half circles into which the receptacle is divided by the partition *d*³. In other words, the said openings are nearer one end of the said partition *d*³ than to the other and in reverse order; the purpose of which is to throw the load,

when either receptacle is filled, to one side of the vertical line, so that the receptacle will turn from its filling to its emptying position, under the action of gravity from its load.

The receptacle shaft *d*⁴ is loosely journaled in a bail *d*⁷, which is pivoted, as shown at *d*⁸, to the front and rear casing-boards *b b'*, and is provided with a scale-beam *d*⁹, carrying an adjustable weight *d*¹⁰.

The scale beam *d*⁹ projects outward through a slot *d*¹¹, in the right-hand casing-plate *b*³, which slot serves to limit the pivotal motion of the scale-beam. The receptacle-shaft *d*⁴ extends outward at each end through vertical slots *d*¹² in the boards *b b'*, which slots are of sufficient length to permit the necessary vertical motion of the receptacle, with the scale-beam.

To the side of the rotary receptacle are secured two sets of projecting pairs of stop-lugs or arms *d*¹³, which are conveniently formed of strips tacked to the heads of the receptacle and of greater length than the diameter of the receptacle. These stop-lugs *d*¹³, carried by the receptacle co-operate with a pair of fixed stops *d*¹⁴, rigidly secured, as shown to the inside front and rear walls of the elevator-hood.

The fixed stops *d*¹⁴ are so located, with respect to the stop-lugs *d*¹³, on the receptacle, that the latter will only engage with the former, when the receptacle is in its uppermost position, as controlled by the pivotal movement of the scale-beam. In other words, when the rotary receptacle is in its uppermost position and counterpoised by the weight *d*¹⁰, the stop-lugs *d*¹³ will be engaged by the fixed stops *d*¹⁴, and the receptacle will thereby be held stationary in its filling position; but when the load in the filling receptacle becomes sufficient to tip the beam the stop-lugs *d*¹³ will drop below the fixed stops *d*¹⁴, thereby permitting the receptacle to turn under the weight of its load into its dumping position.

A pawl *d*¹⁵, subject to the action of a spring *d*¹⁶ and limited in its movement by a stop-pin *d*¹⁷, is in position to engage with the left hand margin of the peripheral openings *d*⁵ and *d*⁶, when the receptacle is in its uppermost or filling position, and serves to prevent the receptacle from turning backward under

the rebound from the interception of the stop-lugs d^{13} , by the fixed stops d^{14} .

The rotary motion of the receptacle, under the gravity of its load is quick, and, for this reason, it will not do to rely on the weight d^{10} to raise the receptacle to its uppermost position in time, for the proper engagement of the parts d^{13} and d^{14} . To meet this requirement, therefore, the receptacle shaft d^4 is provided with a double cam d^{18} , the respective surfaces of which react at the proper time against a suitable resistance block or lug d^{19} , fixed to the case-board b , and serve to lift the receptacle into its highest position, on the completion of its half turn, regardless of the weight d^{10} , thereby insuring the proper engagement of the parts d^{13} and d^{14} , for intercepting and holding the receptacle in its filling position.

To some suitable fixed part, such as the elevator trunk a , I attach a set of tally-wheels f and operate the same from the receptacle through pawl-lever f' and connecting rod f^2 , attached as shown, to crank-pin f^3 on the cam d^{18} . These tally-wheels or registering mechanism, may be of any suitable construction; and as the same are well-known no further description thereof is deemed necessary.

The different parts of my machine have now been pointed out; and the action of the same is probably clear from the drawings and the description already given.

When the receptacle is in its filling position, all the parts will stand, as shown in Fig. 1. The grain will then be supplied from the elevator to the elevator hood a^3 , and will thereby be directed to the open mouth of the receptacle compartment d' or d^2 , which may then be in the filling position. Whenever the load in the filling receptacle becomes sufficient to counterpoise the weight d^{10} and tip the scale, the lugs d^{13} will drop below the fixed stops d^{14} , thereby releasing the receptacle and permitting the same to make a half turn under the gravity of its load. This half turn will bring the filled receptacle into its dumping position and the empty receptacle into its filling position. The grain discharged from the rotary receptacle is received by the bagger and directed through either leg c' thereof to the

sacks or other receptacles, by manipulating the shunt valve c^2 .

By actual usage on a working machine, during the past season, I have found that this form of rotary grain weigher will do the work, for which it is designed, with reliability under all conditions. There will be a slight leakage from the elevator-hood or head, directly into the bagger, while the rotary receptacle is making a part of its half turn; but this motion is so quick and the closed part of the periphery thereof so short, that this leakage or unweighed portion is unimportant for thrashing purposes.

What I claim, and desire to secure by Letters Patent of the United States, is as follows:

1. In a grain-weigher, the combination with a pivoted scale-beam and a rotary receptacle carried thereby, of cooperating fixed stops and stop-lugs for intercepting and holding said receptacle in its filling position, and a cam operative, under the motion of said receptacle, to insure the engagement of said stops and stop-lugs, substantially as and for the purpose set forth.

2. In a grain-weigher, the combination with a pivoted scale-beam and a rotary receptacle carried thereby, of the cooperating fixed stops and stop-lugs, for intercepting and holding said receptacle in its filling position, a cam rotating with the receptacle, and a fixed resistance lug or block, cooperating with said cam, to lift said receptacle and insure the engagement of said stops and stop-lugs, substantially as described.

3. In a grain weigher, the combination with a suitable support or casing, of a scale beam pivoted to said support, a rotary two compartment receptacle carried by said beam, the stop lugs d^{13} , the fixed stops d^{14} , the double cam d^{18} , the resistance block d^{19} , and the pawl d^{15} , all arranged and operating substantially as described.

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

GUSTAV ANDERSON.

Witnesses:

JAS. F. WILLIAMSON,
EMMA F. ELMORE.