(No Model.)

LE ROY C. TRYON.

AUTOMATIC GRAIN WEIGHING AND REGISTERING APPARATUS.

No. 385,024. Patented June 26, 1888.

Fig. 1.

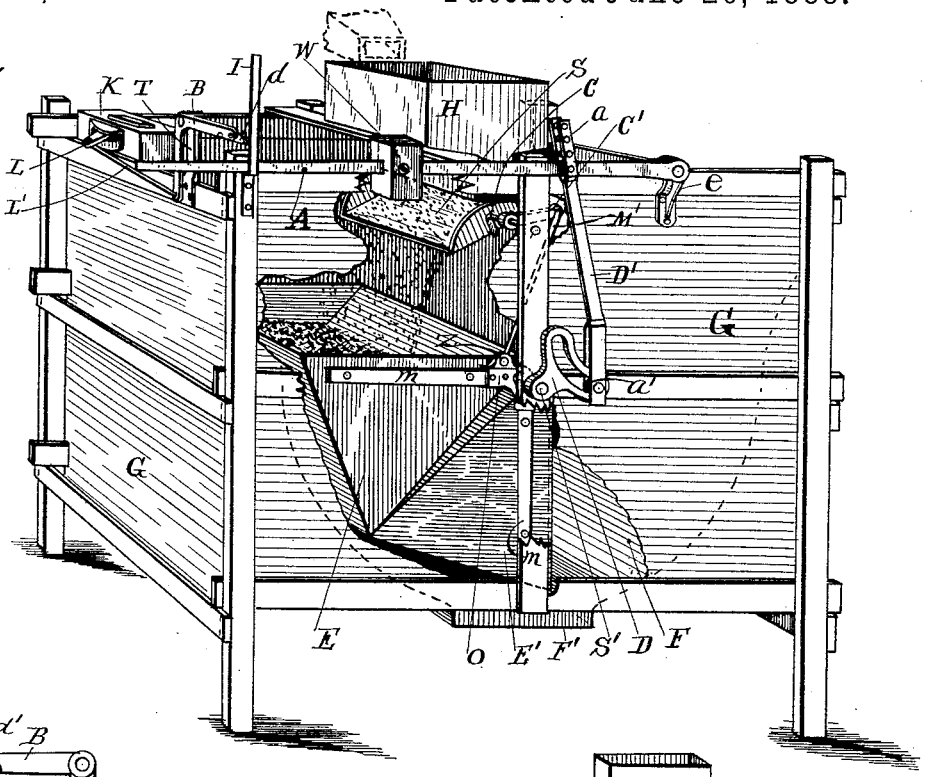


Fig. 2.

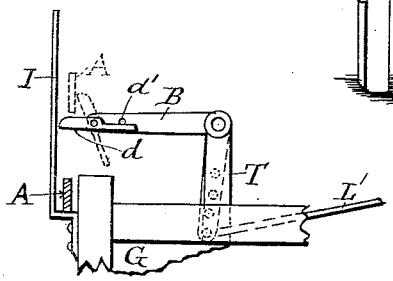


Fig. 3.

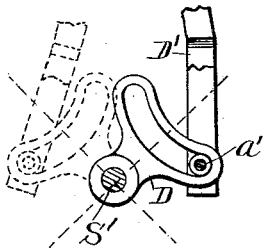
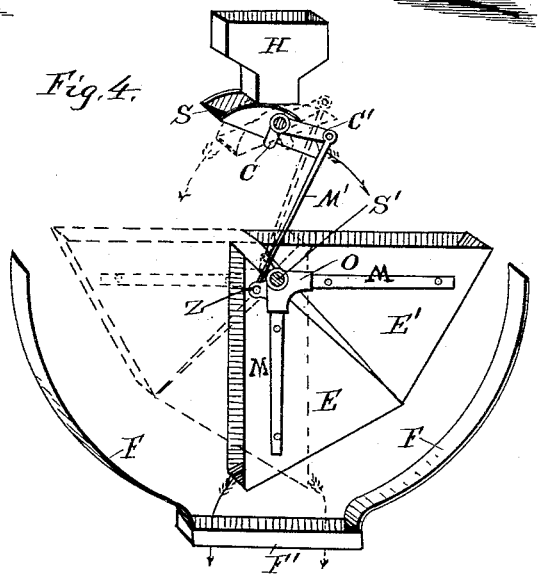


Fig. 4.



Witnesses.

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LE ROY C. TRYON, OF MARSEILLES, ILLINOIS.

AUTOMATIC GRAIN WEIGHING AND REGISTERING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 385,024, dated June 26, 1888.

Application filed January 30, 1888. Serial No. 262,446. (No model.)

To all whom it may concern:

Be it known that I, LE ROY C. TRYON, a citizen of the United States of America, residing at Marseilles, in the county of La Salle and State of Illinois, have invented certain new and useful Improvements in Automatic Grain Weighing and Registering Apparatus, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to certain improvements in an automatic grain weighing and registering apparatus, the construction and operation of which are fully set forth and explained in the following specification and claims, reference being had to the accompanying drawings, and the letters and figures of reference thereon, making a part of this specification, in which—

Figure 1 is a perspective view, having parts broken away to show the interior mechanism. Fig. 2 is a detail view of parts of the registering mechanism. Fig. 3 is a detail view of the slotted arm of the grain-buckets, shaft, and of a part of the pitman connecting it with a scale-beam; and Fig. 4 is a perspective view of parts of the interior mechanism of the apparatus.

Referring to the drawings, G represents the body or case of the apparatus, constructed, as shown, of a frame having corner-posts forming legs and cross-bars connecting them, and having its four sides closed with thin walls, and having the concave floor F arranged in the lower part thereof and provided with a central discharge-opening, F'. (Shown more particularly in Fig. 4.)

S' is a rock-shaft extending through the case G at about its center and boxed at each end in proper boxes in the frame of the case. Said shaft has secured on it, near each end next the interior walls of the case, the spiders O, to which are secured radial arms M.

E and E' are a pair of grain-buckets, triangular in cross-section and arranged between and secured to arms M, with their open sides at about right angles with each other, and oscillate with shaft S', so they may be alternately brought to position to be filled and afterward reversed and discharge their contents.

D is an arm secured on the extending end of shaft S', and is formed with a curved cross-slot near its outer end curved toward said shaft.

D' is a connecting-rod having each end forked, its lower end being provided with a friction-roller, *a'*, between its forks, for operating in the slot of arm D, and its upper end forked over and pivotally secured to the scale-beam A, which is arranged above arm D, along the side of case G, and fulcrumed at its inner end to the bracket *e*, secured to the side of case G. The upper forks of said connecting-rod D' are provided with a series of pin-holes for receiving the pivotal pin *a*, so the scale-beam A may be adjusted vertically between said forks and held adjusted as desired.

W is the sliding weight of the scale-beam, and has a set-screw for securing it in any desired place on the beam.

C is a rock-shaft located directly above shaft S' and parallel therewith and properly boxed at each end in the frame of the case. Said shaft C has its central part cranked and bears within its cranked portion the tilting and oscillating grain-chute S, for conducting grain alternately to the grain-buckets E E' from hopper H at the top of case G.

C' is an arm secured on shaft C, and M' is a connecting-rod connecting said arm C' with crank-lug Z of spider O on shaft S, as shown particularly in Fig. 4. Said arm and lug are arranged on their respective shafts to extend in opposite directions from each other, so that when shaft S' oscillates it will, by means of being thus connected with shaft C, oscillate it in an opposite direction, for the purpose of oscillating the chute S to tilt it in the proper direction to conduct grain alternately from side to side to the grain-buckets, as they assume their upright position after the discharge of their proper amount of grain.

B is a bell-crank pivoted at its angle to the standard T, secured to the frame of case G.

L' is a connecting-rod connecting its depending arms with the lever L of a grain-register, K, which may be of any form or mechanism. (Not necessary to be shown in detail, as the register in itself forms no part of this invention.) The horizontal arm of said bell-crank is provided with a gravity-latch, *d*, pivoted to its side and above scale-beam A, which permits the upward passage of said scale-beam,

but which falls after the scale-beam passes it, and is held in a horizontal position by means of pin *d'* on the side of said bell-crank.

The scale-beam in its downward passage engages said latch and depresses it and the arm of the bell-crank until it becomes disengaged therefrom, and thus operates the registering device each time a bucket is filled and discharged, and records or registers the total amount of grain passing through the machine.

I is a guard-arm for guiding the scale-beam properly in its movement.

In operation the device is intended to be used in connection with a thrashing-machine and receive the grain therefrom as it is thrashed in its hopper H, from whence it falls upon the chute S, which conducts it to a bucket, as shown in Fig. 1. The weight W is set on the scale-beam to indicate the number of pounds it is desired to run into the grain-bucket. When the proper amount of grain in weight has run into the grain-bucket, it will overcome the weight of the scale-beam and cause the shaft S' to oscillate in one direction and, through the medium of slotted arm D and connecting-rod D', elevate said scale-beam above gravity-latch *d*, as shown in Fig. 2. Such oscillation of said shaft will cause the friction-roller *a'* of connecting-rod D to be slightly elevated and traverse the slot in arm D down its incline to its opposite end to the position as shown in dotted lines in Fig. 3.

The desired weight of the grain in the buckets oscillates them, and with them arm D, and as soon as a position of arm D is reached, so its slot inclines in the opposite direction past the center, when the weight of the scale-beam and connecting-rod D' will complete the oscillation of said buckets and their shaft and its arm and cause the filled bucket to discharge its grain through exit F' out of the machine and bring the opposite bucket in position to be in like manner filled and discharged.

As before stated, the chute S is oscillated by shaft S' through its connection therewith, as shown in dotted lines in Fig. 4, to conduct grain in the proper direction to the proper bucket, and so on, alternately filling each bucket as they oscillate, as shown and described. The machine thus becomes automatic and operates solely by means of the weight of the grain passing through it and accurately weighs and registers each bushel or other given quantity of grain passing through it; also in use it is designed that the apparatus be placed upon the thrashing-machine with which it is used and the grain elevated to it, and also that a suitable spout be arranged below exit F' to catch and conduct the registered grain to a wagon or bin, as desired.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is as follows, to wit:

1. In the grain weighing and registering apparatus shown and described, the combination of the oscillating buckets E E', shaft S, having the slotted arm D and crank-lug Z, connecting-rod D', having the friction-roller *a'*, scale-beam A, weight W, oscillating chute S, shaft C, having the arm C', and connecting-rod M', substantially as and for the purpose set forth.

2. In the grain weighing and registering apparatus shown and described, the combination of the oscillating buckets E E', shaft S', having the slotted arm D, connecting-rod D', having the friction-roller *a'*, scale-beam A, weight W, bell-crank B, having the gravity-latch *d*, and connecting-rod for connecting said bell-crank with a registering device, substantially as and for the purpose set forth.

3. In the grain weighing and registering apparatus shown and described, the combination of the oscillating buckets E E', a grain-chute connected therewith and adapted to oscillate alternately to conduct grain to either bucket, and a scale-beam adapted to be overcome by the weight of the grain in a bucket, substantially as and for the purpose set forth.

4. In a grain weighing and registering apparatus, in combination with the oscillating buckets E E', and oscillating chute S, connected therewith and adapted to operate simultaneously in a reverse direction therefrom, the scale-beam A, and the mechanism, substantially as set forth, for connecting said beam and buckets, wherein the grain passing through said apparatus is automatically weighed, substantially as specified.

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