(No Model.)

2 Sheets—Sheet 1.

B. SIMONS.

ROTATING GRAIN WEIGHER.

No. 494,035. Patented Mar. 21, 1893.

Fig. 1.

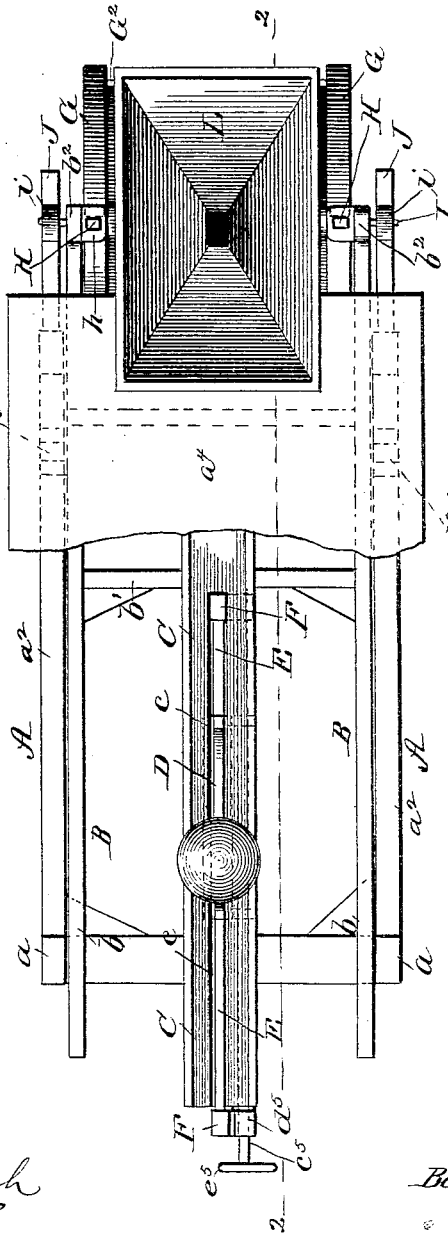
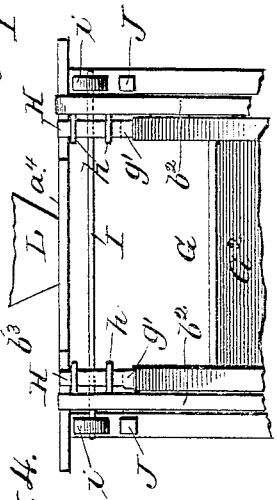


Fig. 4.



WITNESSES:

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(No Model.) 2 Sheets—Sheet 2.

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ROTATING GRAIN WEIGHER.

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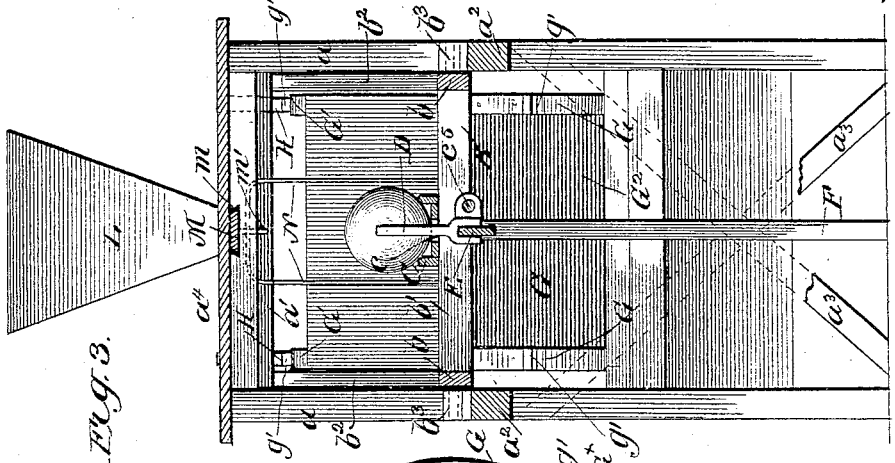

Fig. 3.

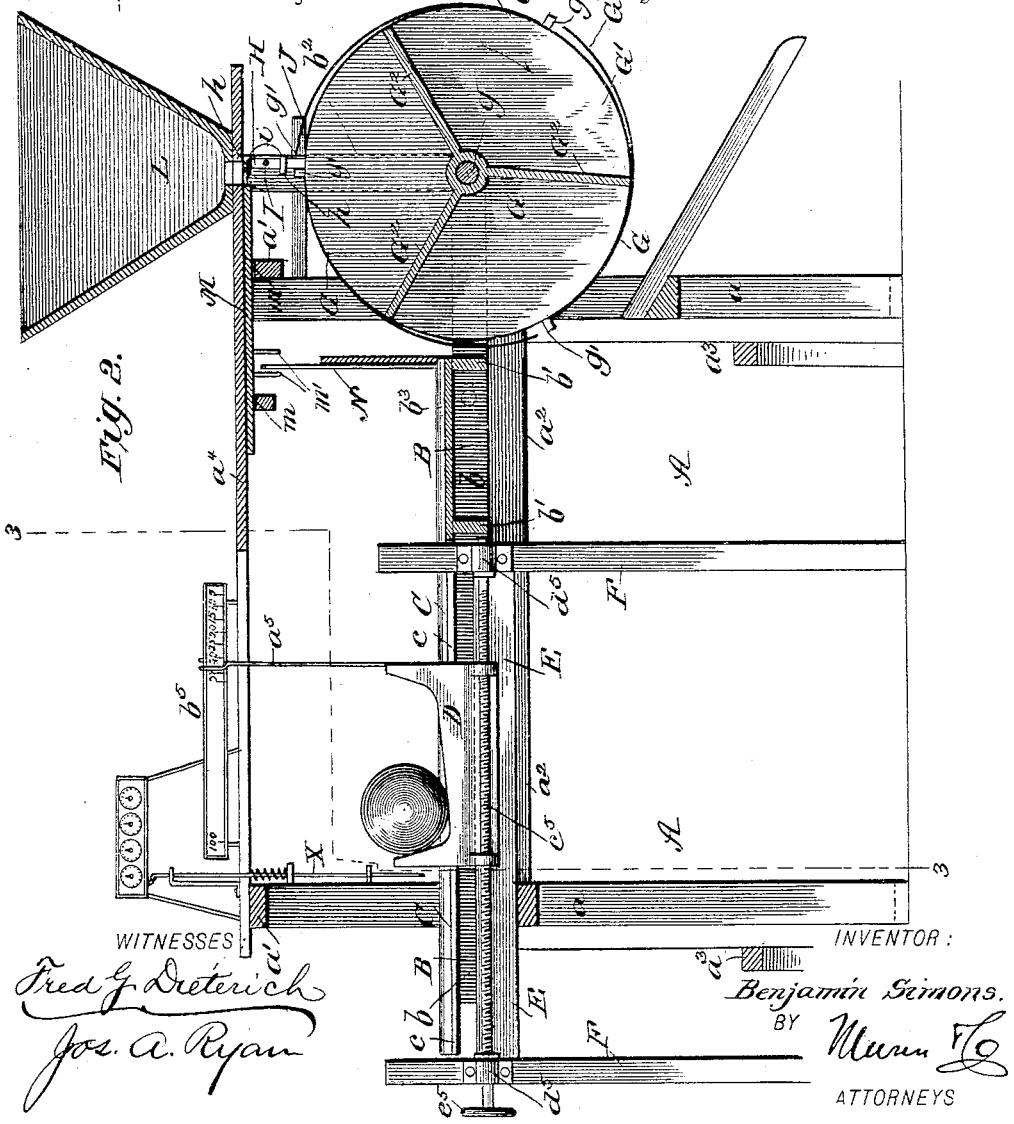

Fig. 2.

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UNITED STATES PATENT OFFICE.

BENJAMIN SIMONS, OF CHARLESTON, SOUTH CAROLINA.

ROTATING GRAIN-WEIGHER.

SPECIFICATION forming part of Letters Patent No. 494,035, dated March 21, 1893.

Application filed June 14, 1892. Serial No. 436,752. (No model.)

To all whom it may concern:

Be it known that I, BENJAMIN SIMONS, residing at Charleston, in the county of Charleston and State of South Carolina, have invented certain new and useful Improvements in Grain-Meters, of which the following is a specification.

My invention relates more particularly to the class of rotary grain meters, and it consists in certain details of construction and novel combination of parts, all of which will be hereinafter fully described in the specification and particularly pointed out in the claims, reference being had to the accompanying drawings in which

Figure 1 is a top plan view of my improved machine parts being broken away. Fig. 2 is a vertical longitudinal section thereof on the line 2—2 Fig. 1. Fig. 3 is a transverse section on the line 3—3 Fig. 2 and Fig. 4 is a detail view of the automatic locking mechanism hereinafter specifically referred to.

In the accompanying drawings A indicates a frame or support formed of the side posts a a the cross beams a' a' the longitudinal brace beams a^2 a^2 the crossed beams a^3 a^3 and the top board a^4.

B indicates a balancing frame formed of the longitudinal side beams b b the cross bars b' b' and the vertical end bars b^2 mounted upon the outer ends of the side beams. This frame is fulcrumed at b^3 upon the side beams a^2 of the main frame its forward end (which supports the rotary bucket presently referred to) being projected beyond the front posts a and under the forward end of the top board a^4.

Mounted centrally on the balance frame is a track or way C the rear end of which is longitudinally slotted as at c through which projects a sub track D, longitudinally adjustable upon a beam E disposed between the upright posts F F. By reference to Fig. 2 it will be noticed that the sub track is curved upward at both ends which ends act as stops for the ball or weight presently referred to.

The object of providing a sub track with its ends turned up to form stops for the movable weight, is for the purpose of utilizing the impact force of the weight in two distinct directions. Furthermore, the incline of the sub track serves to carry the ball weight back to its former position and hold it there, after the bucket wheel has been emptied. It also serves as a rest, relieving the pressure of the ball when the machine is not in operation. It will also be noticed by reference to Fig. 2 that a pointer a^5 projects up from the inner end of the sub track, which is arranged to be moved across the face of an indicator b^5, on which is scaled the number of pounds being delivered, which will vary in accordance with the change of position of the sub track. This indicator in practice is scaled on both sides one being for the less and the other for the greater units and the same will be regulated by two balls of same size but different weights.

As a convenient means for adjusting the sub track, I employ a screw rod c^5 held to turn in bearings d^5, and which engages threaded ears on the sub track, the end of such screw having a suitable hand wheel e^5 as shown. By arranging the sub track and longitudinally slotted main track as stated, the main track when elevated by the depression of the bucket wheel will lift the weight off the sub track, the machine receiving thereby a quick and accurate action.

G indicates the bucket wheel mounted to rotate upon a shaft g journaled in the forward ends of the side beams of the balance frame B, such wheel being formed of the end disks G' G', and the several radially disposed members G^2 preferably three, whereby to form the wheel with three bucket compartments as shown. The peripheral edges of the disks G' have each three radially extended stops g' one for each compartment, which engage lock pins H H, held to slide vertically in socket or guide bearings h h formed in the upper end of the front vertical members of the balance frame B, such pins being connected by a transverse rod I, the ends of which extend through and beyond the pins and carry rollers i i. It will be noticed by reference to Fig. 2 that when the balance lever or frame is held back to raise the wheel G up under the feed hopper, the lock pins H will seat on the peripheries of the disks G', between the lock stops g' and the free ends of the flat spring plates $G^\times$, secured at one end to the peripheral edges of the disks, their free ends projecting out therefrom as clearly shown in Fig. 2. By this arrange-

ment it will be readily seen that the lock pins when down will hold the wheel from rotating in either direction.

J indicates stop bars secured to the main frame which project under the rollers *i* on the pin lifting rod I, such bars serving to unlock or elevate the pins from the engagement with the disks when the balance lever and bucket wheel are depressed.

As shown in Fig. 2 the rollers *i* when the bucket wheel is in its upper position, are disposed over the bars J. Now as the receiving compartment of the wheel becomes filled with the material until the amount is equal to the counterbalance, it quickly tilts the frame and as its front end lowers the rollers *i* engage the fixed bars J and being retarded, are, as the lever is further depressed disengaged from the wheel as before stated. As the wheel is dumped and the next succeeding bucket compartment brought under the hopper the pins H will travel up on the springs $G^{\times}$ until they pass the free ends, when they fall by gravity or spring onto the disk rim in front of the next stop.

The hopper L has an automatic cut off slide M held to reciprocate in dovetail guideways *m*, *m*. The rear end of this slide has depending lugs or pins *m'* between which extends the upper end of a rocker bail N projected up from the cross bar b^2 of the balance frame as shown. By this arrangement it will be readily seen that as the frame is tilted forward by the overbalance of the weight in the bucket wheel the slide M will be forced forward to cut off further feed of the material and when the frame again tilts rearward the slide will be drawn backward to open the feed aperture. The inner portion of the track way C is extended forward and terminates at the fulcrum of the lever frame. Upon the upper board of frame is supported a registering mechanism of any approved construction, it having the usual units, tens, hundreds and thousands wheels.

X indicates the register operating rod connected with the units wheel in the ordinary manner. This rod extends just low enough to come in contact with and be raised up by the main track when said track is elevated by dumping of the bucket wheel and so causes the units wheel to make one-tenth of a revolution and register one dump of the bucket wheel.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a grain meter, in combination, a main frame, a balance frame fulcrumed thereon, carrying a rotary bucket wheel at one end, and a track way at its opposite end, a movable weight held to travel on such track way, stops on the main frame adapted to limit the opposite movements of the weight and automatic lock devices adapted to lock the bucket wheel from rotating when raised and arranged to become disconnected therefrom when said wheel is depressed substantially as and for the purpose described.

2. In a grain meter the combination with the main frame and the bucket carrying balance frame or lever fulcrumed thereon, said lever provided with a rearwardly extending longitudinally slotted track way, of a sub track projected through the slotted track, inclined rearward and downward, stops forming the ends of such sub track, and a movable weight held to travel on the main and sub tracks between the stops substantially as and for the purpose described.

3. The combination with the frame A the balance frame B fulcrumed thereon and provided with a bucket wheel G at its front end and a longitudinally slotted track way at its rear end, of the sub track D longitudinally adjustable in said slotted track C, and formed with upwardly projecting stops at its ends, and the movable weight held therebetween and on the main track all substantially as and for the purpose described.

4. The combination with the main frame A, a scale or gage beam held thereon, the balance frame B fulcrumed thereon, and provided with a bucket wheel G at its front end, and a longitudinally slotted track C at its rear end, of the sub track D longitudinally adjustable along the slotted track, said track D having upturned ends and a pointer secured thereto and arranged to traverse the gage bearing and means for adjusting the sub track substantially as and for the purpose described.

5. The combination with the main frame, the balance frame journaled thereon and provided with counterbalance devices, of the rotary bucket wheel G formed of the end disks and the internal buckets or compartments, said disk having radial lock stops *g'* and lock springs $G^{\times}$ the lock pins H H vertically movable in the arms b^2 of the balance frame B, the rod I connecting the pins H H, having rollers *i* at its outer ends and the fixed stops or bars J J secured to the main frame and adapted to retard the downward movement of the pins H when the bucket is depressed, whereby to release the said pins from the lock stops on the bucket wheel disks, all arranged as and for the purpose described.

BENJAMIN SIMONS.

Witnesses:
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WILLIAM M. STEINMEYER.