No. 674,386. Patented May 21, 1901.

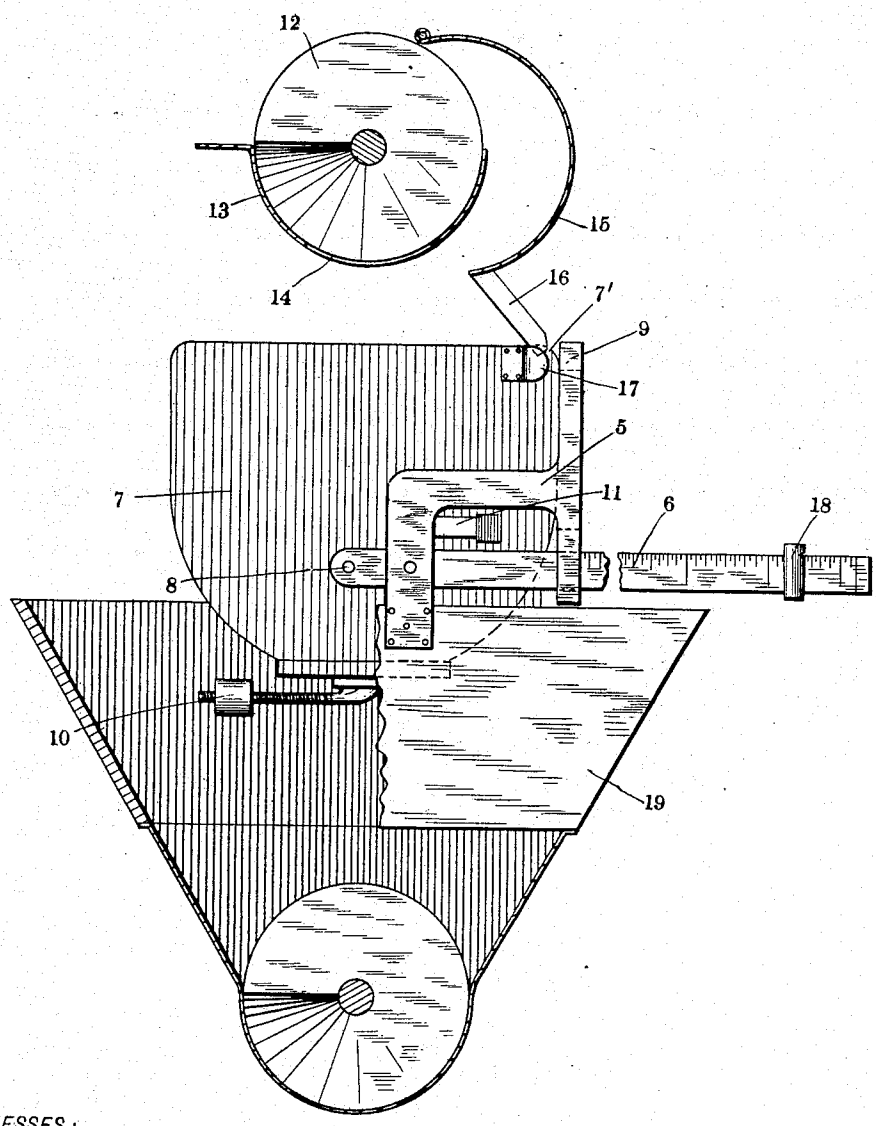
J. B. SCHUMAN.

AUTOMATIC WEIGHING MACHINE.

(Application filed June 25, 1900.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.



WITNESSES:

B. M. Ballard.

F. Bowdoin.

INVENTOR

James B. Schuman.

BY

Arthur M. Hood

ATTORNEY

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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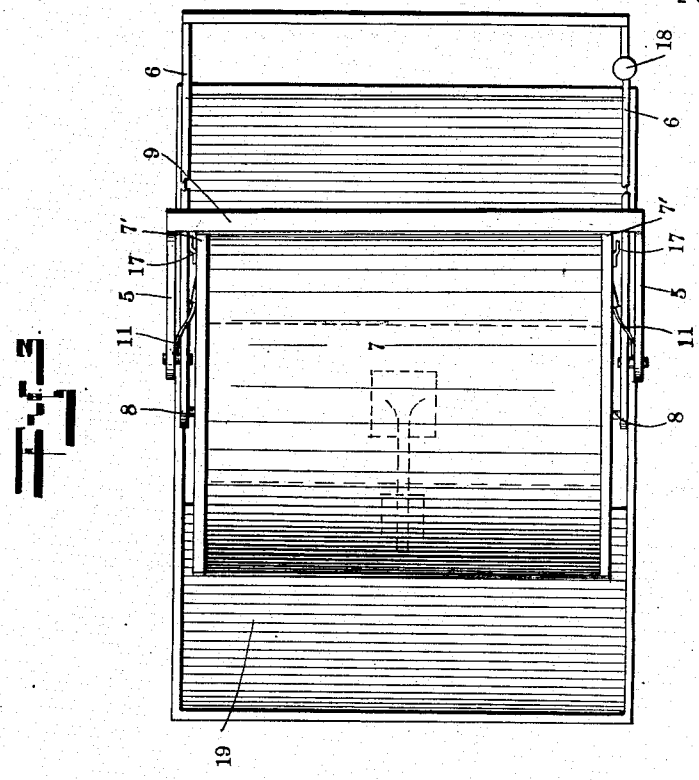


FIG. 1.

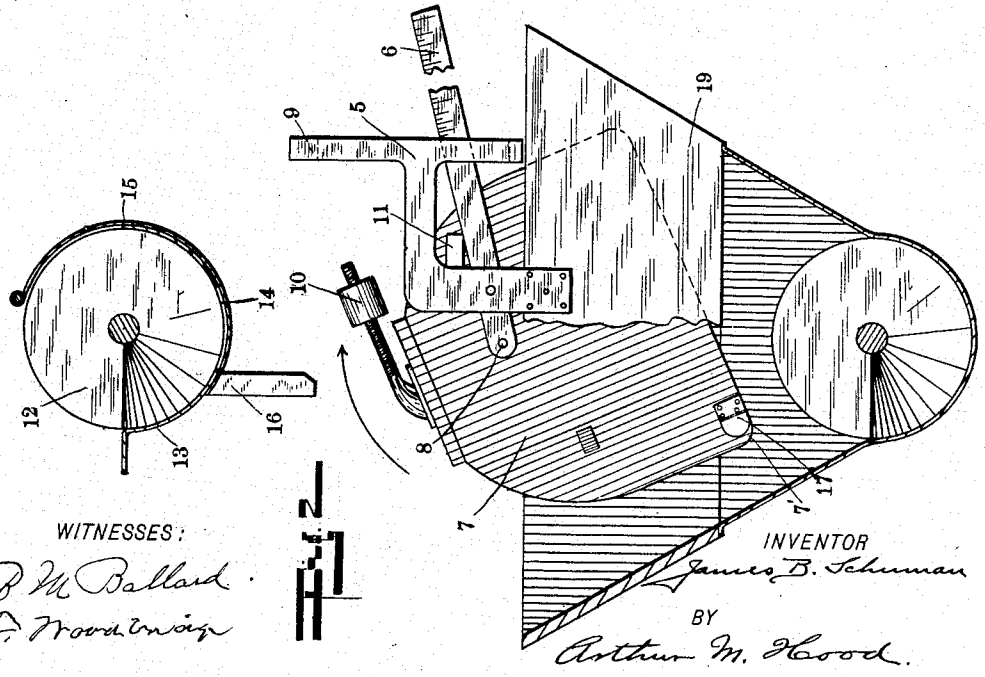


FIG. 2.

WITNESSES:

R. M. Ballard.

F. Moore Craig

INVENTOR

James B. Schuman

BY

Arthur M. Hood.

ATTORNEY

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JAMES B. SCHUMAN, OF COLUMBIA CITY, INDIANA, ASSIGNOR OF THREE-FOURTHS TO JOSEPH K. SHARPE, JR., AND AUGUSTIN BOICE, OF INDIANAPOLIS, INDIANA.

AUTOMATIC WEIGHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 674,386, dated May 21, 1901.

Application filed June 25, 1900. Serial No. 21,446. (No model.)

To all whom it may concern:

Be it known that I, JAMES B. SCHUMAN, a citizen of the United States, residing at Columbia City, in the county of Whitley and State of Indiana, have invented a new and useful Automatic Weighing-Machine, of which the following is a specification.

My invention relates to an improvement in automatic weighing-machines.

The object of my invention is to produce a cheap and efficient automatic weighing-machine particularly designed for use in connection with grain-separators.

The accompanying drawings illustrate my invention.

Figure 1 is a side elevation with the parts in receiving position. Fig. 2 is a similar view with the parts in dumping position. Fig. 3 is a plan.

In the drawings, 5 indicates a supporting-frame, upon which is pivoted, upon suitable supports, a scale-beam 6, the fulcrum end of which is bifurcated, so as to receive the bucket 7. Bucket 7 is pivotally mounted at 8 upon the short arm of beam 6, between the ends thereof, said pivotal support or axis being to one side of the center of bucket 7, so as to slightly unbalance said bucket. When in its upper normal position, the bucket is so arranged that the edge 7′ of its heavy side engages a cross-bar 9, carried by frame 5, the said bar preventing a forward rotation of the bucket. Secured to the bottom of the bucket 7 is an adjustable counterweight 10, which may be adjusted toward or from the axis of the bucket upon the light side, the arrangement being such that said weight may be thrown far enough away from the axis to slightly more than compensate for the heavy side of the bucket, so that when the parts are in the position shown in Fig. 1 the normal tendency of the bucket when empty is to swing upon its axis in a reverse direction, said movement being prevented, however, by a spring-latch 11, carried by the frame and coöperating with a portion of the bucket.

The material to be weighed may be introduced into the bucket by any desired means. In the drawings I have shown a screw-conveyer 12 for the purpose, the casing 13 of said conveyer being provided with a discharge-opening 14. Opening 14 is normally closed by a spring-door 15, provided with an arm 16, arranged to be engaged by finger 17, carried by bucket 7. Beam 6 is provided with a suitable counterpoise 18 and is provided with a scale of the usual form. Located beneath the machine in position to receive the material discharged from bucket 7 is any suitable form of hopper or receiver 19.

In operation the bucket when empty lies in the position shown in Fig. 1. The upper edge 7′ lies against cross-bar 9, and catch 11 engages frame 5, so as to prevent the normal tendency of a reverse rotation caused by the counterweight 10. In this position finger 17 has engaged arm 16, so as to open door 15. In view of the fact that the axis 8 of the bucket is upon the same side of the medial line as counterweight 10 the turning moment about said axis is gradually shifted by the introduction of the material to be weighed until it passes to that side of the medial line opposite weight 10 on the same side as edge 7′. The introduction of material into the bucket causes a depression of the short arm of beam 6 as soon as sufficient weight has been introduced to counterbalance poise 18. This movement lowers edge 7′ until it may pass beneath cross-bar 9. As soon as this occurs the bucket will rotate in the direction indicated by the arrow, owing to the preponderance of weight upon the right-hand side of the axis, Fig. 1, at the same time withdrawing finger 17 from arm 16 and allowing door 15 to close, so as to shut off the supply of material. The weight of the material is enough to revolve the bucket to the position indicated in Fig. 2, by which time weight 10 will have crossed the axis of the bucket, and the introduced weight having dropped out said weight will cause a continuation of the movement of the empty bucket in the same direction. The moment of inertia of weight 10 will be sufficient to carry the bucket slightly beyond the position shown in Fig. 1, so as to allow latch 11 to take under frame 5. The withdrawal of the introduced weight from the bucket allows beam 6 to resume its normal position, so that when the above-de-

scribed operation takes place edge 7′ will come into engagement with cross-bar 9 at the same time that latch 11 comes into action. As the bucket 7 nears the completion of its revolution finger 17 comes into engagement with arm 16 and opens door 15, so as to permit the material to resume its movement into the bucket.

It will be noticed that the center of gravity of the bucket when empty lies upon one side of the axis 8, while the center of gravity of the bucket when full lies upon the opposite side of said axis, so that said axis may be said to be upon one side of the center of gravity of the bucket, but upon the opposite side of the center of gravity of the interior of said bucket.

I claim as my invention—

1. In an automatic weighing-machine, the combination with a beam, of a receptacle revolubly mounted thereon, the axis of said receptacle being upon one side of the center of gravity of said receptacle as a whole and upon the opposite side of the center of gravity of the load-receiving portion of said receptacle, means for holding the receptacle in position to receive material, and means for allowing a rotation of said receptacle after the center of gravity of the loaded receptacle has passed to the opposite side of the axis.

2. In an automatic weighing-machine, a single completely-rotatable receptacle having a center of gravity and a center of interior which do not coincide, an axis of rotation passing between said centers, and a weigh-beam support for said axis of rotation.

3. In an automatic weighing-machine, the combination with a suitable supporting-frame, of a weigh-beam mounted thereon, a receptacle revolubly mounted upon said beam, the weight of said receptacle being unbalanced about an axis and tending to rotate said receptacle in a reverse direction, and the interior of said receptacle having its major portion upon the opposite side of the axis of rotation, means for preventing a reverse rotation of said receptacle, means for normally holding said receptacle against forward rotation, and means for releasing said receptacle so as to allow forward rotation.

4. In an automatic weighing-machine, the combination with a suitable supporting-frame, of a weigh-beam mounted thereon, a receptacle revolubly mounted on said weigh-beam, the major portion of the weight of said receptacle being upon one side of the axis of rotation and the major portion of the interior of said receptacle upon the opposite side of said axis, a catch for preventing a rotation of said receptacle in the direction of weight of said receptacle, and a bar carried by said frame for normally engaging said receptacle on that side of the axis upon which the major portion of the interior lies, the arrangement being such that a weight introduced into said receptacle will counterbalance the weigh-beam and withdraw the receptacle from engagement with the frame.

JAMES B. SCHUMAN.

Witnesses:
AUGUSTIN BOICE,
ARTHUR M. HOOD.