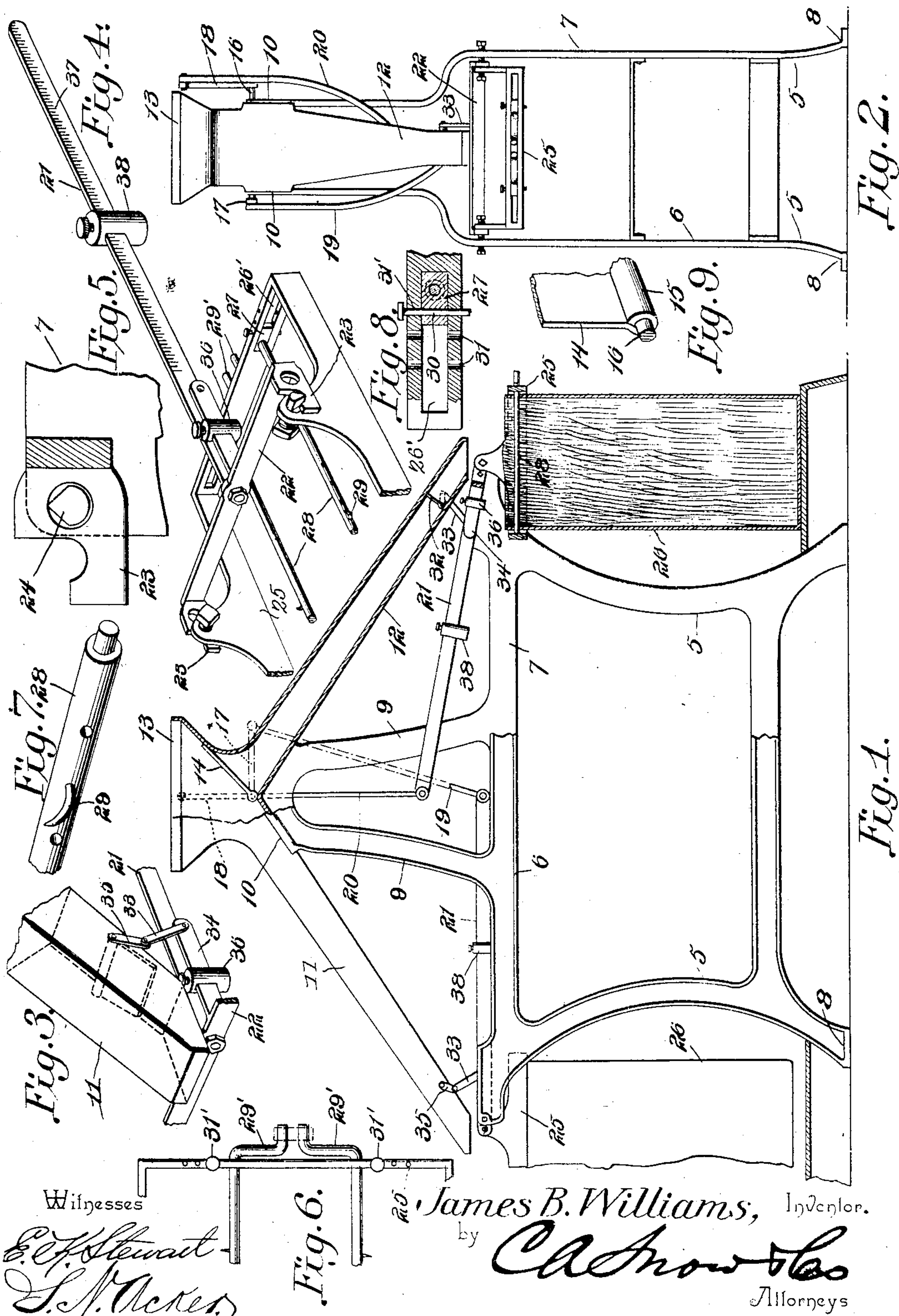


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J. B. WILLIAMS.
MACHINE FOR BAGGING AND WEIGHING GRAIN.
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UNITED STATES PATENT OFFICE.

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MACHINE FOR BAGGING AND WEIGHING GRAIN.

SPECIFICATION forming part of Letters Patent No. 782,183, dated February 7, 1905.

Application filed January 20, 1904. Serial No. 189,874.

To all whom it may concern:

Be it known that I, JAMES B. WILLIAMS, a citizen of the United States, residing at Minden, in the parish of Webster and State of Louisiana, have invented a new and useful Machine for Bagging and Weighing Grain, of which the following is a specification.

This invention relates to certain improvements in machines for weighing and bagging grain of that general class shown and described in Letters Patent granted to me on the 18th day of August, 1903, under No. 736,663.

The object of the invention is to improve, simplify, and cheapen the construction of the machine and to provide improved means for automatically bagging and accurately weighing the grain or other material in predetermined quantities as the same is discharged from a thresher or other source of supply.

A further object of the invention is to provide an auxiliary cut-off valve at the mouth of the discharge-chute movable to open and closed positions by the movement of the scale-beam, so as to prevent the column of grain within the chute from flowing in the sack after the beam is overbalanced.

A still further object of the invention is to provide a novel form of bag-holder for supporting the sack in the proper position to receive the grain from the discharge-chute, said holder being so arranged as to permit the sack to be quickly and conveniently released after the same has been filled.

The invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended, it being understood that various changes in form, proportion, and minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

In the accompanying drawings, forming a part of this specification, Figure 1 is a longitudinal sectional view of the machine. Fig. 2 is an end view. Fig. 3 is a detail perspective view of one of the discharge-chutes, showing the construction of the auxiliary cut-off

valve. Fig. 4 is a detail perspective view of the scale-beam and holder detached. Fig. 5 is a detail sectional view of the frame and scale-supporting bracket. Fig. 6 is a top plan view of a portion of the bag-holder. Fig. 7 is a detail perspective view of the crank-arms of the bag-holder. Fig. 8 is an end view, partly in section, of the bag-supporting frame. Fig. 9 is a detail perspective view of the main valve.

Similar numerals of reference indicate corresponding parts in all the figures of the drawings.

The frame of the machine, which may be formed of metal or other suitable material, is preferably forged or cast, as shown, and consists of the supporting-legs 5 and longitudinal side bars 6 and 7, the legs 5 being bent laterally to form feet 8, by means of which the machine may be secured to a platform or other suitable support. Arranged on opposite sides of the supporting-frame and secured in any suitable manner to the longitudinal side bars 6 and 7 are uprights 9, provided with terminal flanges 10, between which are supported the divergent chutes 11 and 12, said chutes leading from a hopper 13, as shown. Disposed within the hopper 13 at the juncture of the chutes 11 and 12 is a vibrating valve 14, which regulates the flow of grain or other material and discharges the same alternately through said chutes.

The valve 14 is preferably formed of a single piece of metal or other suitable material, one end of which is bent or curved to form an eye 15 for the reception of a rock-shaft 16, journaled in suitable bearings in the flanges 10 and side walls of the hopper 13. The rock-shaft 16 is provided with terminal crank-arms 17 and 18, arranged at right angles to each other, as shown, and connected, respectively, by means of pitman-rods 19 and 20, to the inner ends of the scale-beams 21. The scale-beams 21 extend longitudinally of the supporting-frame and have their outer ends threaded or otherwise rigidly secured to brackets 22, said brackets being provided with supporting-arms 23, on which are fulcrumed adjustable knife-edges 24, threaded in the side bars 6

and 7 of the supporting-frame. The relative position of the crank-arms 17 and 18 with respect to the pitman-rods is such that when either of the scale-beams is overbalanced the upward movement of the connecting-rod will bring said rod in direct alinement with its respective crank-arm, or, in other words, on dead-center, as clearly shown by dotted lines in Fig. 1 of the drawings, thereby locking said valve and preventing any further movement of the same until the opposite bag or sack has been filled.

Pivoted between the supporting-arms 23 are substantially rectangular bag-supporting bails or frames 25, adapted to support the bag or sack 26 in the proper position to receive the grain or other material from the chutes 11 and 12. The front and rear walls of the bails 25 are slotted, as indicated at 26', and slidably mounted in said slots are bearing-blocks 27, in which are journaled perforated rods or tubes 28. Fitting within the perforations in the tubes 28 are adjustable pins or spurs 29, adapted to engage the mouth of the sack 26 and support the latter within the bail or frame. The rods 28 are provided with terminal cranks 29, by means of which said rods may be rotated so as to cause the spurs to project downwardly, and thereby release the sack after the latter has been filled. The bearing-blocks 27 are provided with openings 30, adapted to register with any one of a series of openings 31 in the walls of the frame or bail 25, said bearing-blocks being adjustable laterally to accommodate any size bag or sack and locked in adjusted position by a pin or bolt 31'.

As a means for preventing the column of grain or other material within the chutes from flowing into the sack after the scale-beam is overbalanced I provide auxiliary cut-off valves 32, pivoted within the chutes 11 and 12, respectively, and movable to open and closed positions through the medium of rods 33, one end of each of which is pivoted to a poise-beam 34 and the opposite end thereof to the crank-arm 35 of the cut-off valve. The beams 34 extend rearwardly from the brackets 22 and are provided with adjustable weights 36 for regulating and balancing the scales.

The scale-beams 21 are provided with the usual graduations 37 and weight-poise 38 and are preferably arranged in alinement, as shown, the lower ends of the rods 19 being curved inwardly, as indicated, and pivoted to said beams, as before stated.

The crank-arms, valves, and connecting-rods may be provided with ball-bearing in order to reduce friction and render the scale more accurate.

In operation the grain is fed from a thresher or other source of supply into the hopper, and assuming valve 14 to be in the locked position (shown in Fig. 1 of the drawings) the grain will flow through the chute 11 into the bag

or sack until a predetermined quantity has been delivered thereto, when the beam will tilt, raising the rod and forcing the crank-arm to a vertical position, thereby locking the valve and shutting off the supply of grain to said chute and directing it through the chute 12 to the opposite bag or sack. As the beam is overbalanced the rod will force the crank-arm upwardly and automatically close the auxiliary valve, thereby preventing the column of grain within the chute 11 from flowing into the sack after the valve 14 is closed.

Having thus described the invention, what is claimed is—

1. In an automatic weighing and bagging machine, a hopper, a plurality of discharge-chutes leading therefrom, a main valve for controlling the passage of material into said chutes, scale-beams connected to the main valve, and auxiliary valves for regulating the discharge of material from said chutes arranged within the latter and operable by the scale-beams.

2. In an automatic weighing and bagging machine, a plurality of discharge-chutes, a main valve for controlling the passage of material into said chutes, scale-beams connected to the main valve, and an auxiliary valve arranged in each chute for regulating the discharge of material therefrom, said auxiliary valves being operable alternately by the movement of the scale-beams.

3. In an automatic weighing and bagging machine, a hopper, a plurality of discharge-chutes leading therefrom, a main valve for controlling the passage of material into said chutes, a pair of scale-beams actuated alternately by the weight of the material, connecting-rods extending between the scale-beams and the main valve for changing the position of the latter, and an auxiliary valve arranged within each chute for regulating the discharge of material therefrom, said auxiliary valves being operable by the scale-beams.

4. In an automatic weighing and bagging machine, a plurality of discharge-chutes, a main valve controlling the passage of material into said chutes, auxiliary valves for regulating the discharge from said chutes, a pair of scale-beams actuated alternately by the weight of the material, means for operating the auxiliary valves by the movement of said scale-beams, and means connecting both scale-beams to the main valve for changing the position of said valve and positively locking the same with respect to the scale-beam effecting such change of position.

5. In an automatic weighing and bagging machine, the combination with a frame having a pair of scale-beams fulcrumed thereon, chutes mounted on the frame, a valve pivoted at the juncture of said chutes, crank-arms connected to said valve, connecting-rods extending between the crank-arms and the scale-beams to change the position of the valve,

and an auxiliary valve operable by one of the scale-beams.

6. In an automatic weighing and bagging machine, the combination with a frame, of
5 the chutes, a valve, a pair of scale-beams provided with terminal brackets fulcrumed on the frame, bag-supporting members fulcrumed in said brackets, a poise-beam carried by the scale-beams, rods connecting the scale-
10 beams to the valve for changing the position of the latter, an auxiliary valve for regulating the discharge of material from the chutes, and a pivotal connection between the poise-beam and the auxiliary valve for operating
15 the latter by the movement of the former.

7. In an automatic weighing and bagging machine, the combination with a frame, of the chutes, a valve, a pair of brackets fulcrumed on the frame, scale-beams arranged

longitudinally of the frame and having their
20 end portion centrally secured to said brackets, bag-supporting members fulcrumed on said brackets, poise-beams carried by the brackets, rods connecting the scale-beams and
25 the valve for changing the position of the latter and positively locking the same with respect to the scale-beam effecting such change of position, and auxiliary valves pivoted
30 within the chutes and operable by said scale-beams.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

JAS. B. WILLIAMS.

Witnesses:

J. M. CRATES,

D. W. STEWART.