

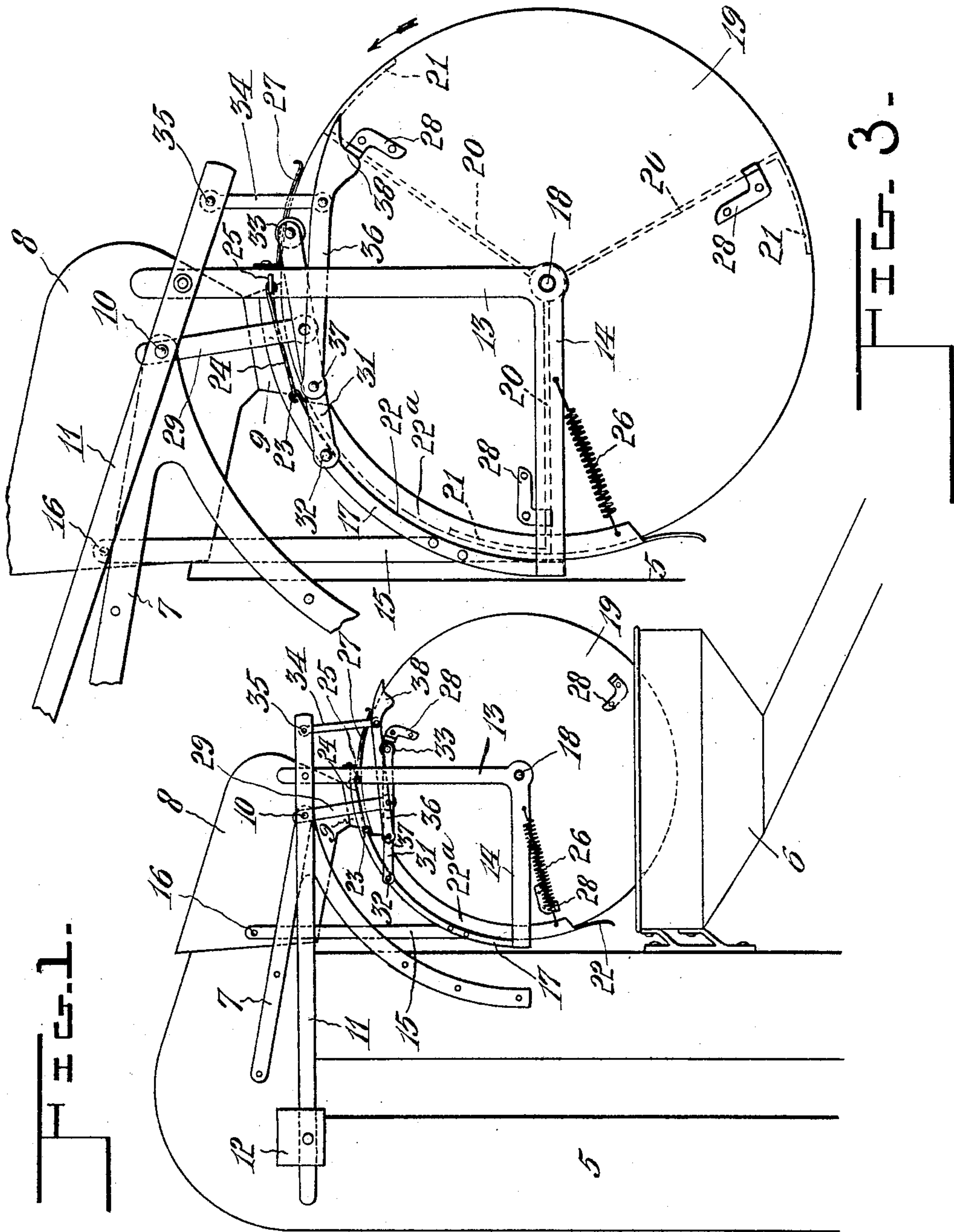
No. 822,566.

PATENTED JUNE 5, 1906.

W. WHITEFORD.
GRAIN MEASURING APPARATUS.

APPLICATION FILED AUG. 3, 1905.

2 SHEETS—SHEET 1.



Witnesses:

John F. Deufferlein
Ed. Cousins.

William Whiteford, Inventor,

By *Marion & Marion*

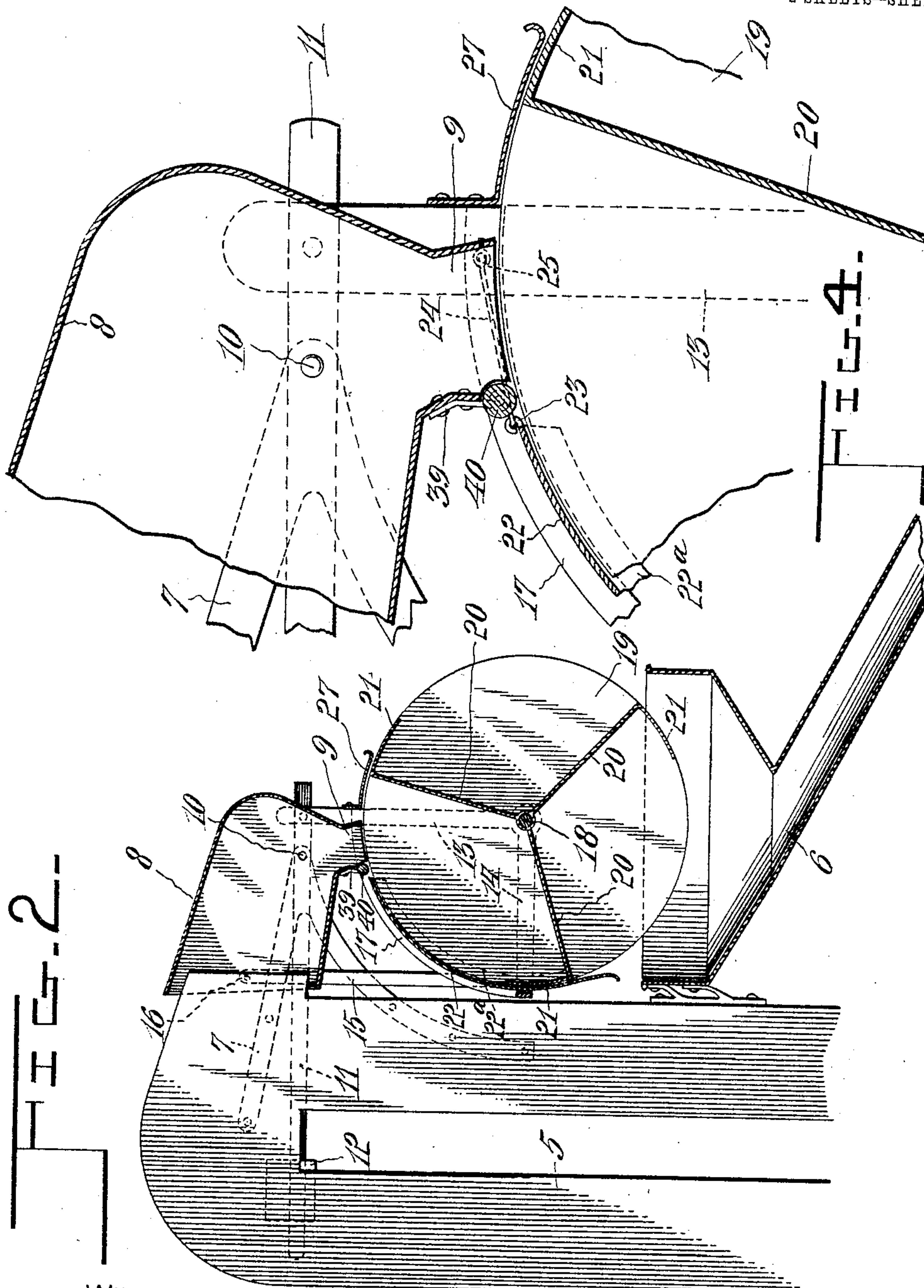
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UNITED STATES PATENT OFFICE.

WILLIAM WHITEFORD, OF VIRDEN, CANADA.

GRAIN-MEASURING APPARATUS.

No. 822,566.

Specification of Letters Patent.

Patented June 5, 1906.

Application filed August 3, 1905. Serial No. 272,455.

To all whom it may concern:

Be it known that I, WILLIAM WHITEFORD, a subject of the King of Great Britain, residing at Virden, county of Dennis, in the Province of Manitoba, Canada, have invented certain new and useful Improvements in Grain-Measuring Apparatus; and I do hereby declare that the following is 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-meters.

The object of my invention is to provide a simple apparatus which may easily be attached to an ordinary form of elevator and which will accurately and automatically measure the quantity of grain passed there-through.

A further object of my invention is to provide such an apparatus with means for automatically striking the grain from the top of the measuring-compartment; and my invention consists of the construction, combination, and arrangement of parts, as herein illustrated, described, and claimed.

In the accompanying drawings, forming a part of this application, I have illustrated one form of embodiment of my invention in which drawings similar reference characters designate corresponding parts, and in which—

Figure 1 is a side elevation of a grain-measuring apparatus, showing its application to the upper end of an elevator. Fig. 2 is a side elevation of the upper end of a grain-elevator, showing in vertical section my grain-meter and the hopper and chute of the elevator. Fig. 3 is an enlarged side elevation of the hopper, showing the application of my grain-meter; and Fig. 4 is a fragmentary detail, in vertical section, showing the hopper and a portion of the grain-meter.

Referring to the drawings, 5 designates an elevator of common construction having fixed thereto a chute 6 of suitable shape and dimensions.

Secured on the opposite sides of the elevator adjacent its upper end are Y-shaped brackets 7, to the outer end of which is pivotally secured a hopper 8, having a spout 9, a suitable pivot 10 being used to connect the hopper to the bracket.

Disposed on the pivot 10 is a beam 11, on one end of which is slidably disposed a weight 12 and to the opposite end of which is pivot-

ed a vertical standard 13, which at its lower end is formed with a horizontal extension 14, to which extension is connected a vertical member 15, which is pivoted at 16 to the hopper. Connecting the vertical standard 13 and this extension 14 is a curved frame 17. The parts numbered from 7 to 17 are duplicated on each side of the apparatus, one side only being described.

Rotatably supported by the lower ends of the vertical standards 13 is a shaft 18, on the opposite ends of which are disposed circular heads 19, connected by longitudinal walls 20, the outer ends of which walls are provided with curved extensions 21.

Disposed under the curved frame 17 is a curved shield 22, having a flange 22^a adapted to engage over the outside of the adjacent circular heads 19. The upper end of the curved shield is provided with a hook 23, engaged by a link 24, which link extends to and engages a staple 25 on the vertical standards 13. A spring 26 has one end connected with the lower end of said curved shield and has its opposite end engaged with the horizontal extension 14, whereby said curved shield is maintained in operative position. Disposed adjacent the periphery of the circular heads and extending from one head to the other and secured upon the vertical standards 13 is a shield 27.

Disposed on the outer face of the circular head 19 are a plurality of angular stops 28. Disposed on the pivot 10 is a link 29, the lower end of which is pivotally connected to a lever 31 intermediate of its ends. One end of the lever 31 is pivoted, as at 32, to the curved frame 17, and its opposite end is provided with a roller 33, adapted to be actuated into the path of movement of the stops 28 when the beam 11 is in an overbalanced position. Disposed adjacent the extreme end of the beam 11 is a link 34, pivoted thereto, as at 35, and pivotally connected at its lower end to a lever 36, one end of which is pivoted, as at 37, to the lever 31 and the opposite end of which is provided with an offset 38, as best shown in side elevation, Fig. 3.

In order to meet the requirements at some weighing-depots that grain measured in a receptacle shall be struck off to insure the measure being completely filled, I provide a bracket 39, secured on one side of the spout 9 in any suitable way, Fig. 4. Rotatably dis-

posed in said brackets 39 is a roller 40, which extends entirely across the spout and is adapted to strike the grain from the compartments formed between the circular head
 5 19 by the longitudinal walls 20.

In the operation of my invention, the beam 11 being in the position shown in Fig. 1, the lever 31 will be depressed so that its roller 33 is in the path of movement of the adjacent
 10 stop 28, so that rotation of the measuring member is prevented. In this position the spout 9 of the hopper is within the line of the periphery of the circular heads 19. The grain being elevated and carried to the hop-
 15 per 8 will fall in the compartment adjacent thereto between the walls 20, and when the compartment is completely filled the weight 12 will be counterbalanced and the right-hand end of the beam depressed on its pivot
 20 10. This movement, through the vertical standards 13, the horizontal extensions 14, and the vertical members 15, will carry the hopper upward until its lower edge is on a line with the periphery of the measuring
 25 member. At the same time this movement of the hopper carries with it the lever 31, disengaging its roller 33 from the adjacent stop 28, and the grain-measuring compartment is carried in the direction indicated by the ar-
 30 row, Fig. 3, and the lever 36 is disposed so that it engages the next succeeding stop 28. During this movement the curved extension 21 on the adjacent wall 20 passes beneath the spout of the hopper and prevents the egress
 35 of grain therefrom, and as each compartment passes under the spout the grain therein will be struck off by the rotatable roller 40. As the measuring member rotates the curved shield 22 prevents the grain from escaping
 40 therefrom until the wall 20 has passed the lower end thereof, when the grain may escape into the chute 6 and be conveyed to a suitable place of deposit. The shield 27 prevents the grain from escaping forwardly from un-
 45 der the spout.

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

1. In a grain-meter, in combination with
 50 an elevator, a hopper, a pivotal support for the hopper, a beam disposed on said pivotal support, a weight on one end of the beam, a rotary multicompartment member pivotally supported from the beam, means for limiting
 55 the rotation of the rotary member, a roller secured to the bottom of the hopper adjacent the rotary member and means for moving said hopper on its pivot.

2. In a grain-meter, in combination with
 60 an elevator, a bracket secured to the elevator and provided with a pivot, a hopper disposed on the pivot and formed with a spout, a bracket on the spout, a roller disposed on the bracket, a rotary multicompartment meas-
 65 uring member disposed adjacent the spout,

a beam and a weight counterbalancing said measuring member, means coacting there- with to limit the movement of the measuring member and means for moving said hopper
 70 on its pivot.

3. In a grain-meter, a supporting-bracket, a beam pivoted thereto, a hopper pivoted to the bracket, a weight on one end of the beam, a vertical standard pivoted adjacent the op-
 75 posite end of the beam, a rotary measuring member pivoted to the standard, means piv- otally secured to the beam for limiting the movement of the measuring member and means for moving said hopper on its pivot.

4. In a grain-meter, a supporting-bracket, 80 a beam pivoted thereto, a hopper pivoted to the bracket, a weight disposed on one end of the beam, a vertical standard pivoted adja- cent the opposite end of the beam and pro-
 85 vided with a horizontal extension and a ver- tical member on said extension, which verti- cal member is pivoted to the hopper, a curved frame connecting the vertical member and the vertical standard, a shield disposed under
 90 the curved frame, a rotary measuring mem- ber pivoted to the standard and means piv- otally secured to the beam for limiting the movement of the measuring member.

5. In a grain-meter, a supporting-bracket, a hopper pivoted thereto, a beam pivoted to 95 the bracket, a frame pivoted to the beam and the hopper, a shield provided with a hook on one end, a link having one end in engagement with the hook and its opposite end engaged
 100 with the frame, a spring having one end con- nected to one end of the shield and its oppo- site end connected with the frame, a shield se- cured to the frame, a rotary measuring mem-
 105 ber below said shields, and means for limiting the movement of said measuring member.

6. In a grain-meter, a pivotally-supported hopper, a beam pivotally supported adjacent thereto, a weight on the beam, a rotary multi-
 110 compartment measuring member pivotally connected to the beam, stops on the measur- ing member, a plurality of links pivoted to the beam, a lever on one of said links, a roller on the end of said lever, a second lever pivoted
 115 to the first lever and provided with an offset end projecting beyond said first lever, and a roller supported by the hopper adjacent the measuring member.

7. In a grain-meter, a pivotally-supported hopper, a rotary multicompartment measur-
 120 ing member supported below the hopper, means for limiting the movement of the measuring member, and a member adapted to strike the grain from the top of each of said compartments in the measuring mem-
 125 ber.

8. In a grain-meter, a pivotally-supported hopper, a rotary multicompartment mem-
 130 ber supported below the hopper, means for limiting the movement of the measuring member, and a rotatable member adapted to

strike the grain from the top of each of said compartments in the measuring member.

9. In a grain-meter, a pivotally-supported
5 hopper, a rotary multicompartment member supported below the hopper, means for limiting the movement of the measuring member, and a rotatable member carried by the hopper and adapted to strike the grain

from the top of each of said compartments in the measuring-chamber.

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In witness whereof I have hereunto set my hand in the presence of two witnesses.

WILLIAM WHITEFORD.

Witnesses:

J. PRITCHARD,
C. DUNCAN.