

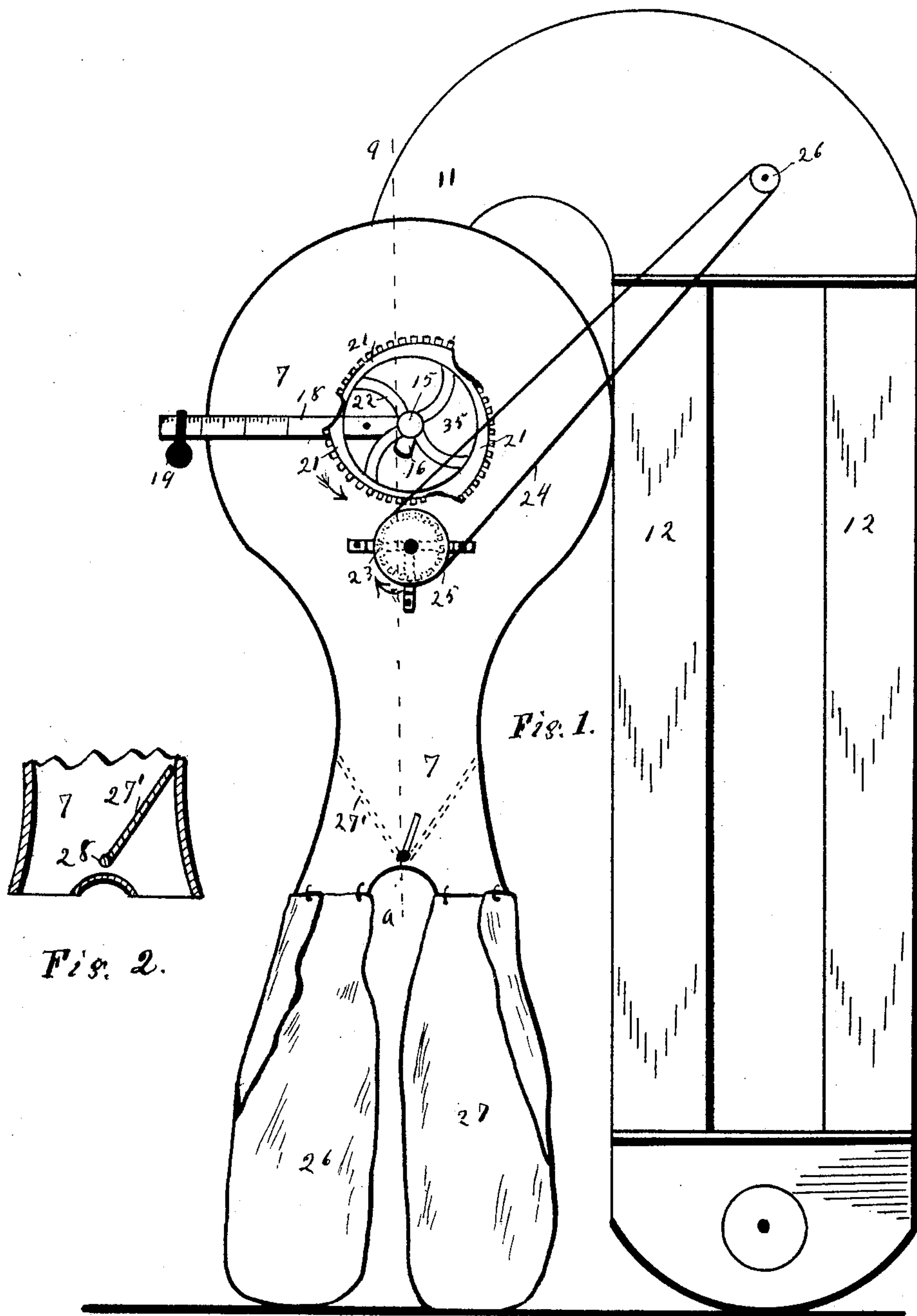
(No Model.)

2 Sheets—Sheet 1.

J. W. DUTTON & A. CRAWFORD.  
GRAIN WEIGHER AND MEASURE.

No. 602,060.

Patented Apr. 12, 1898.



Witnesses  
Henry S. M. Howard,  
Thomas W. Stuart.

Inventors:  
John W. Dutton & Albert Crawford  
By their Attorney Lucius C. West

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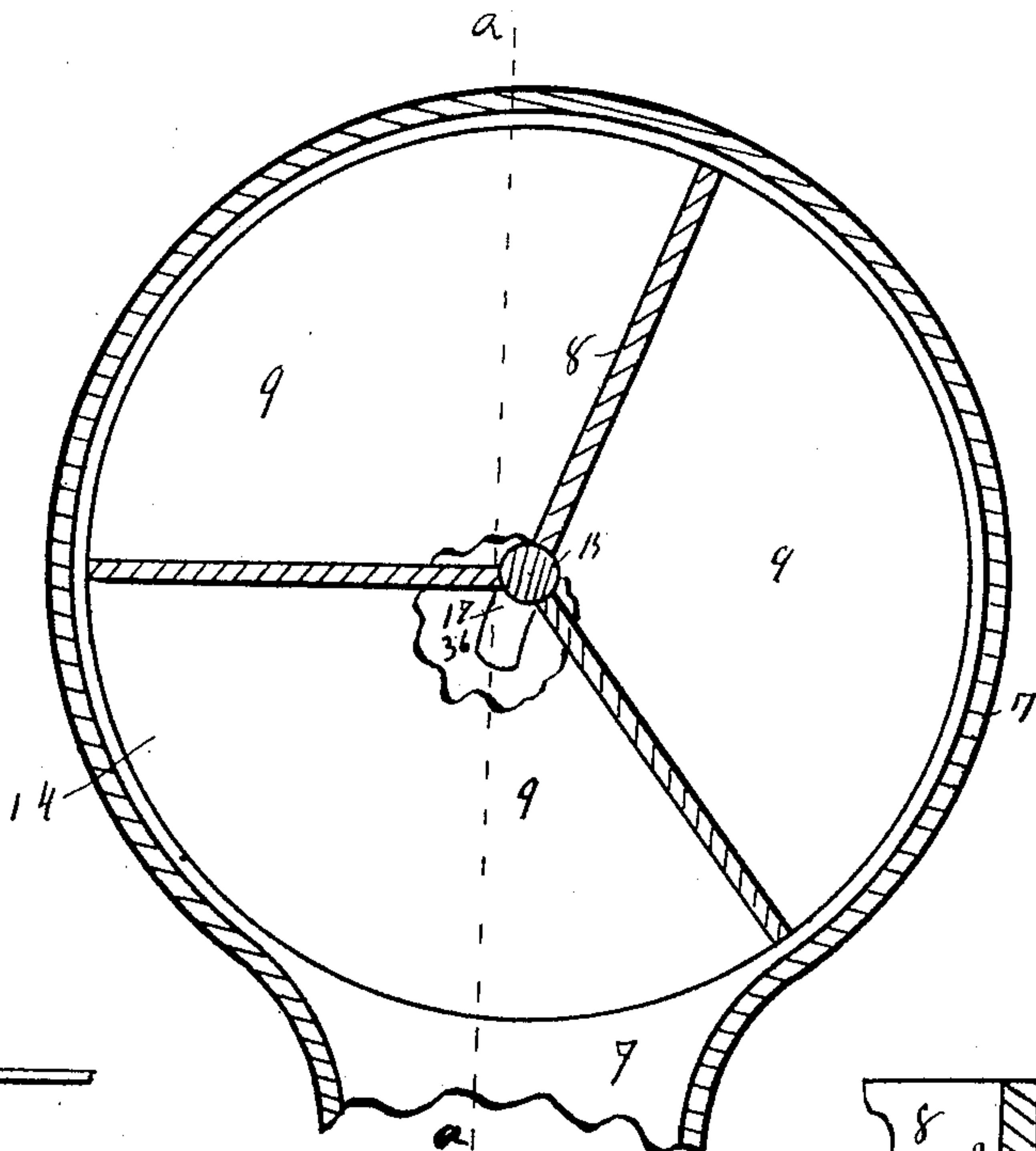


Fig. 4.

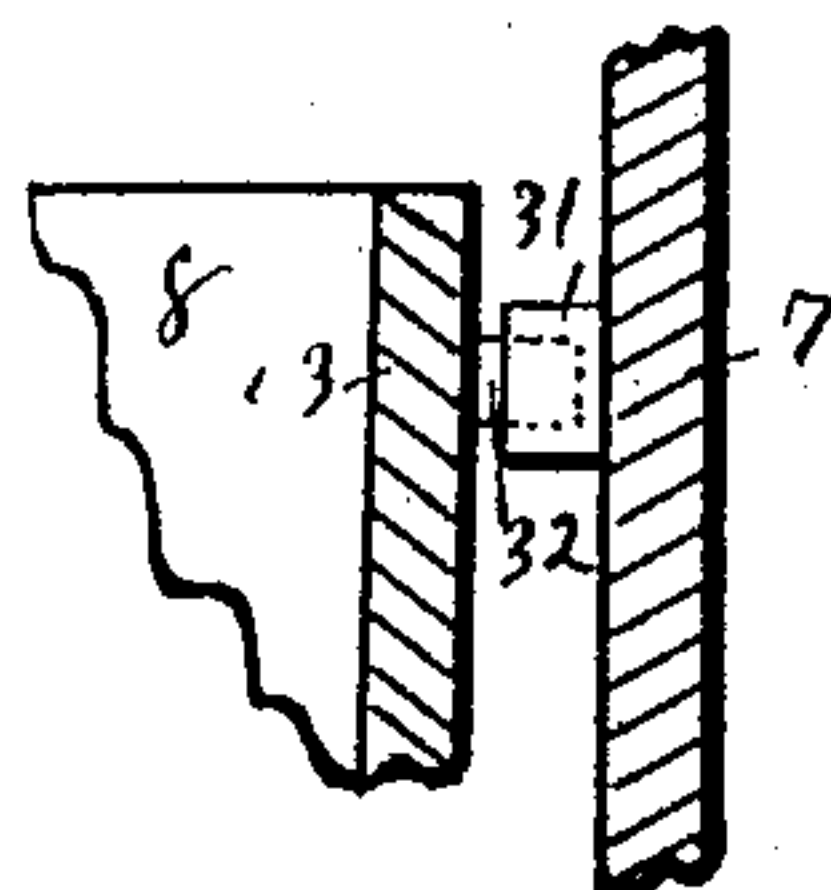


Fig. 6.

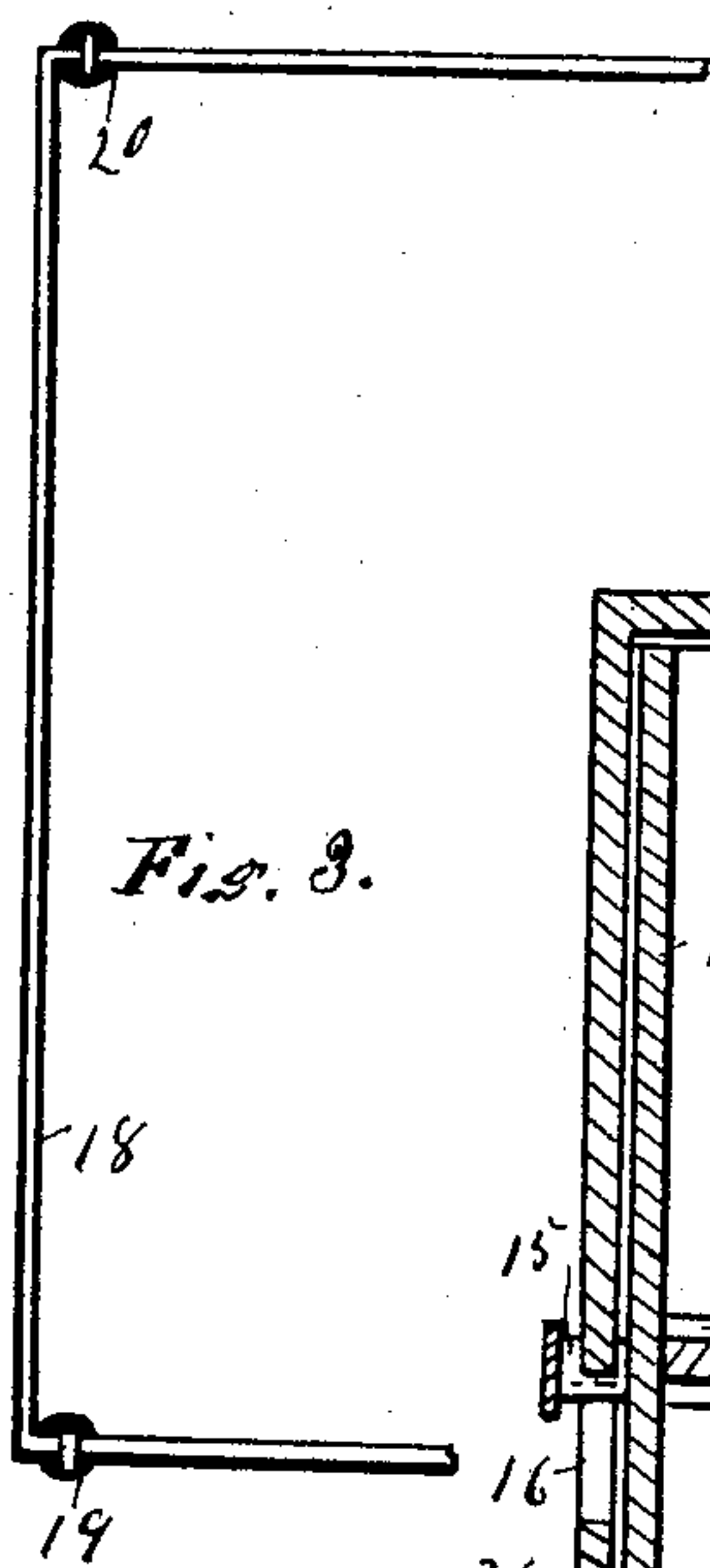


Fig. 3.

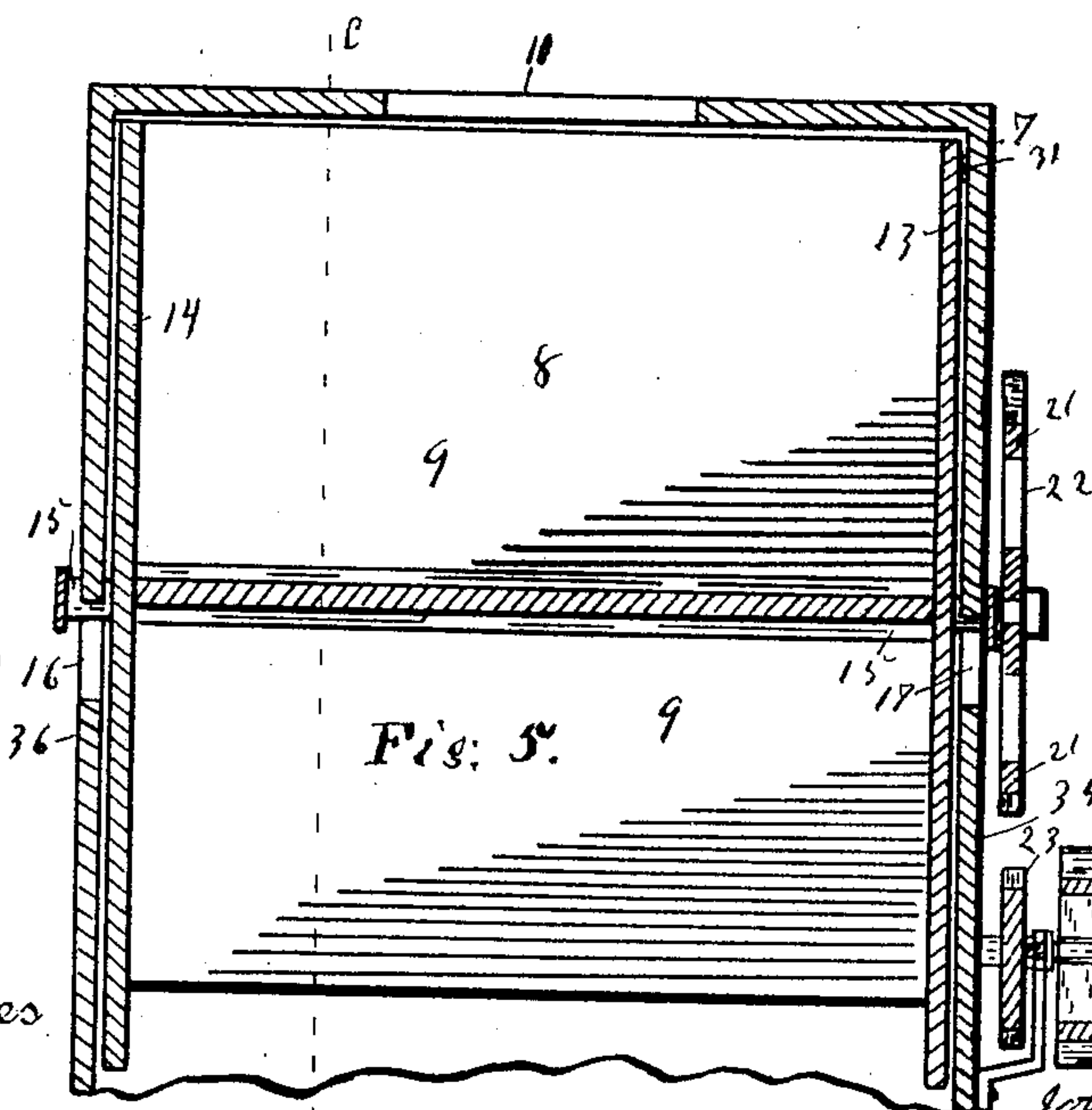


Fig. 5.

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# UNITED STATES PATENT OFFICE.

JOHN W. DUTTON AND ALBERT CRAWFORD, OF BATTLE CREEK, MICHIGAN.

## GRAIN WEIGHER AND MEASURE.

SPECIFICATION forming part of Letters Patent No. 602,060, dated April 12, 1898.

Application filed December 23, 1896. Serial No. 616,696. (No model.)

*To all whom it may concern:*

Be it known that we, JOHN W. DUTTON and ALBERT CRAWFORD, citizens of the United States, residing at Battle Creek, in the county of Calhoun, State of Michigan, have invented a new and useful Grain Weigher and Measure, of which the following is a specification.

This invention relates to grain weighing and measuring machines which are employed in connection with a grain-elevator or other means of delivering the grain into said machine.

The object of the invention is to make a machine in which the weight of the grain overbalances a scale weight or weights, bringing mechanism into operative relations to dump the grain and adjust the machine for continued operation.

Other objects will appear in the following description and claim.

In the drawings forming a part of this specification, Figure 1 is an elevation of the machine with the elevator connected; Fig. 2, a vertical broken section of the lower part of the hopper in Fig. 1, being the same as if taken on a continuation of the dotted line *a a* in Fig. 4; Fig. 3, a plan of the weight-bar in Fig. 1 broken; Fig. 4, a section on line *c c* in Fig. 5, looking from a point at the right; Fig. 5, a section on line *a a*, Fig. 4, looking from a point at the left, showing the interior of the measuring-hopper; and Fig. 6 shows broken details, enlarged, from the upper right-hand corner of Fig. 5, showing a stop below described.

Referring to the parts of the drawings pointed out by numerals, 7 is the hopper, made rounding at the top or upper portion, so as to contain a revoluble grain-receiver 8, made something like a common water-wheel, so as to have compartments 9 to receive the grain through opening 10, Fig. 5, from the spout 11, Fig. 1, of an ordinary grain-elevator 12. This revoluble grain-receiver is closed at the ends by the wheel-like closures 13 and 14, Fig. 5, and is revolubly mounted upon an axle 15, the ends of which axle are in vertically-elongated slots 16 and 17 in the end closures 35 and 36, Figs. 4 and 5, of the hopper. The free ends of the U-shaped weight-bar 18, Figs. 1, 3, and 5, are attached to the ends of the axle 15, so that when the grain

in a compartment of the grain-receiver overbalances the weights 19 and 20 on the weight-bar 18 the grain-receiver will lower, carrying the axle 15 down the slots 16 and 17, bringing certain mechanism into operative relation to dump the grain by revolving the grain-receiver 8 a short distance, which mechanism we will now describe.

On the end of the axle 15, outside of one end of the hopper 7, Figs. 1 and 5, is a gear 22, divided into as many eccentric segments 21 as there are grain-compartments 9, in this case being three; but this is a matter of choice, as the number may be more or less. Below this gear 22 is a pinion 23, which is driven by belt 24 on pulleys 25 and 26, the latter getting its motion from the power which runs the elevator; but this again is a matter of choice as to just how motion is imparted to the pinion 23.

When a grain-compartment 9 of the grain-receiver 8 is sufficiently full of grain so that the weight of said grain will overbalance the weights 19 and 20, the axle 15, with its gear 22, will lower and one of the segments 21 of the gear 22 will mesh with the pinion 23. As this pinion is revolving in the direction of the arrow it will cause the gear 22 to revolve in the direction of its arrow, and since the segments 21 of the gear 22 are on an eccentric the axle ends of the compartments 9 will be raised to the top of the slots 16 and 17 by the time the grain is dumped from the compartment 9 ready for the filling of another compartment 9. During this action, of course, the grain-receiver 8 is revolved the distance of one compartment and the grain therein is dumped, which grain runs down into one of the bags 26 or 27, in accordance with which way the gate 27' is set. As in Fig. 2, the grain will go into the left-hand bag. This gate is on a journaled axle, so that it will swing from one dotted position in Fig. 1 to the other. When tilted over to the position opposite to that in Fig. 2, of course the grain would run into the right-hand bag, Fig. 1. The gear 22, with its segments, not only raises the grain-receiver 8, as stated, but it makes the revolving of the grain-receiver positive and guards against clogging. Since the grain-receiver is revolved the distance of one compartment at a time, this brings the next com-

partment in position to receive the grain into it, which grain continues to be delivered into the mouth of the hopper. Attached near the top of the hopper 7 on the inside of one end is a projection 31, and on the end closure of the grain-receiver 8 are projections 32 for each compartment 9, Figs. 5 and 6, in position to contact with the projection 31 and prevent the grain-receiver from revolving until it lowers, as before stated, and this lowering carries the projections 32 below the projection 31, thus allowing it to dump when the weight of the grain overbalances the weights 19 and 20.

15 Having thus described our invention, what we claim as new, and desire to secure by Letters Patent of the United States, is—

In a grain weigher and measurer, the combination of a hopper having the elongated

slots, a revoluble wheel having grain-com- 20  
partments and an axle with ends in said slots, a wheel or disk attached to one end of the axle and having a series of eccentric peripheral portions, each of said portions having gear-teeth at outer edge, a weight-bar, and a 25  
pinion to which motion is imparted and adapted to mesh with the gear-teeth of the eccentrics, to guard against clogging, substantially as set forth.

In testimony of the foregoing we have here- 30  
unto set our hands in the presence of two witnesses.

JOHN W. DUTTON.  
ALBERT CRAWFORD.

Witnesses:

GEO. M. EVERTS,  
H. H. HUBBARD.