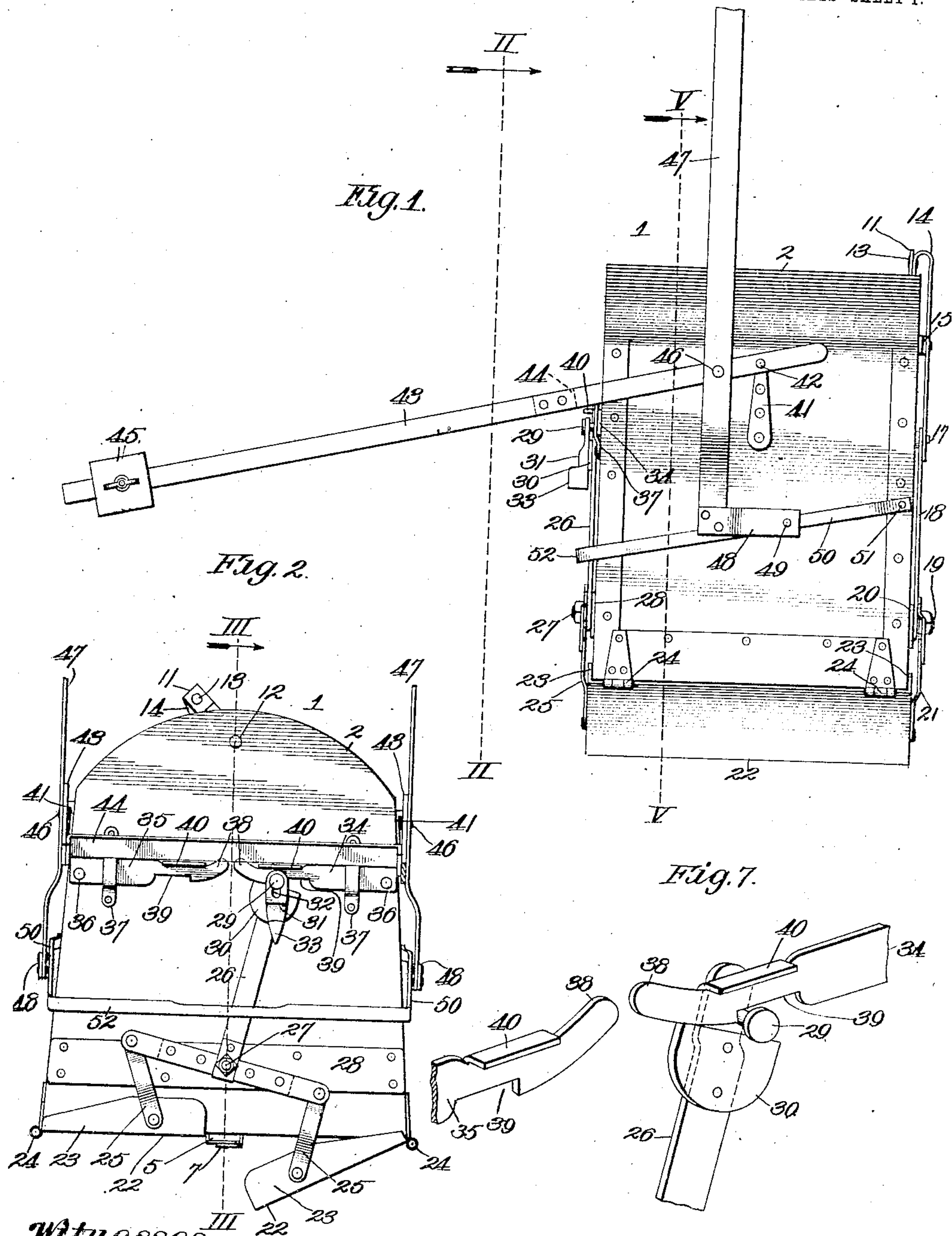


No. 822,451.

PATENTED JUNE 5, 1906.

J. S. HERRON.  
AUTOMATIC WEIGHER.  
APPLICATION FILED JUNE 6, 1905.

2 SHEETS—SHEET 1.



Witnesses  
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2 SHEETS—SHEET 2.

Fig. 3.

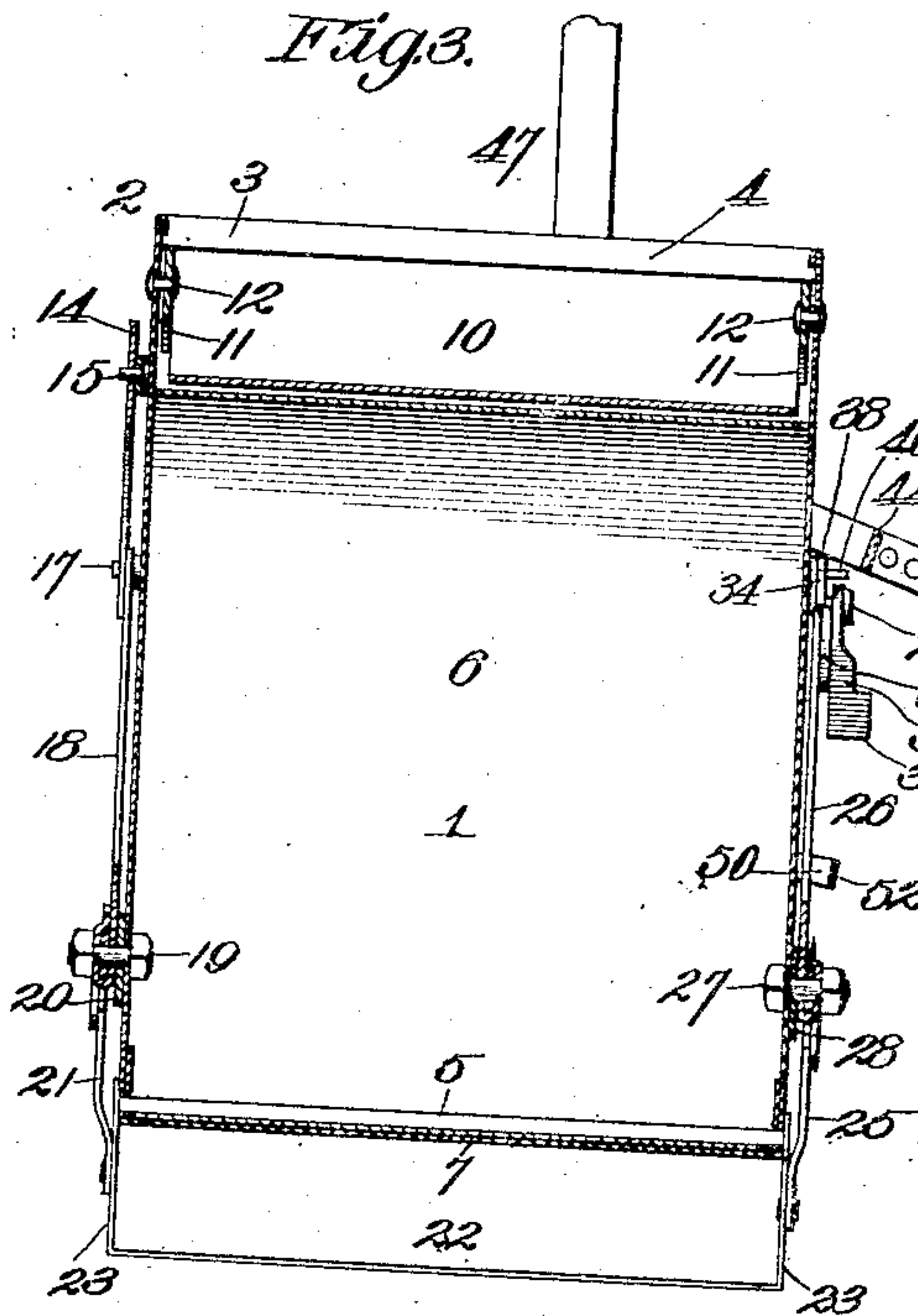


Fig. 4.

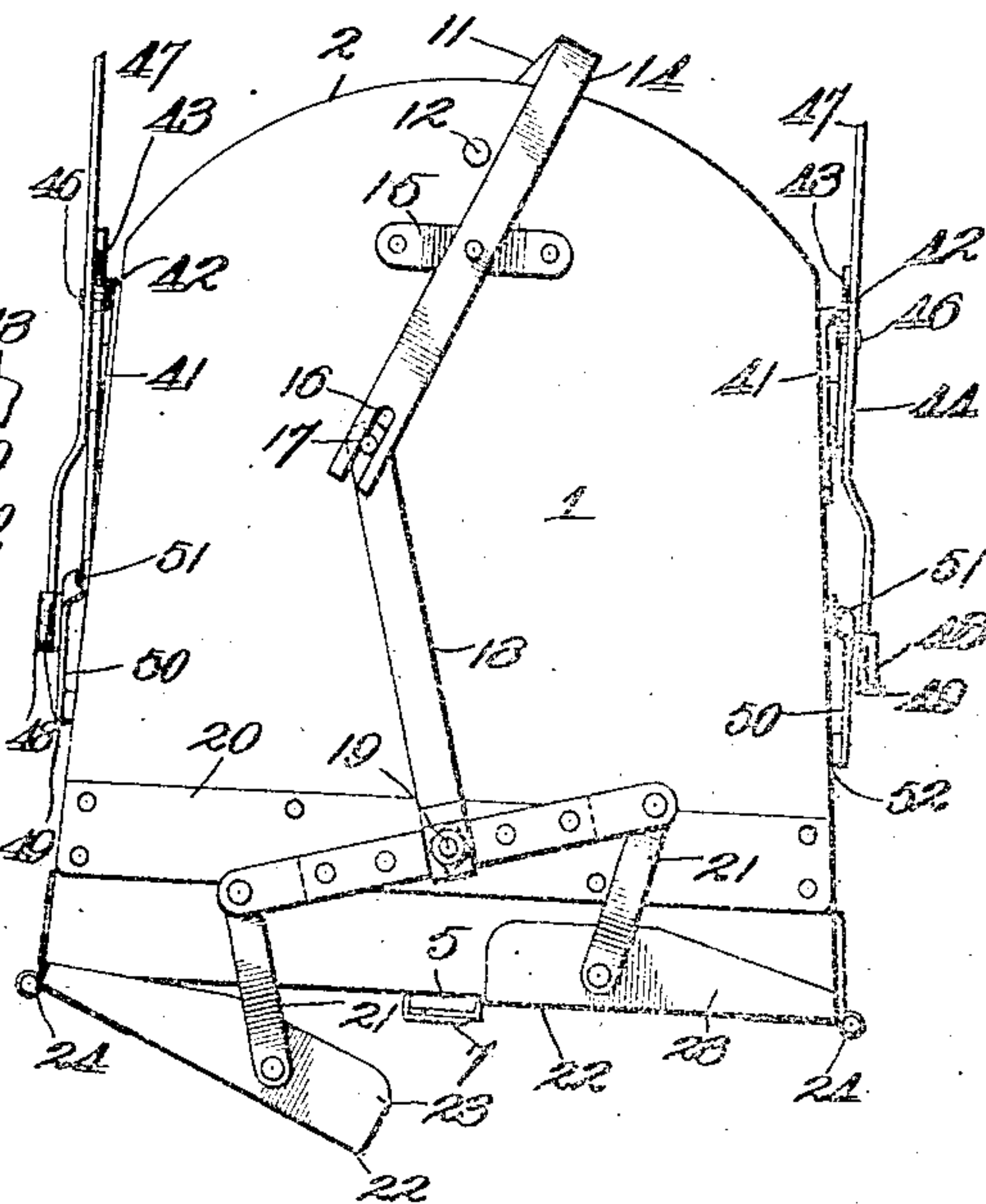


Fig. 5.

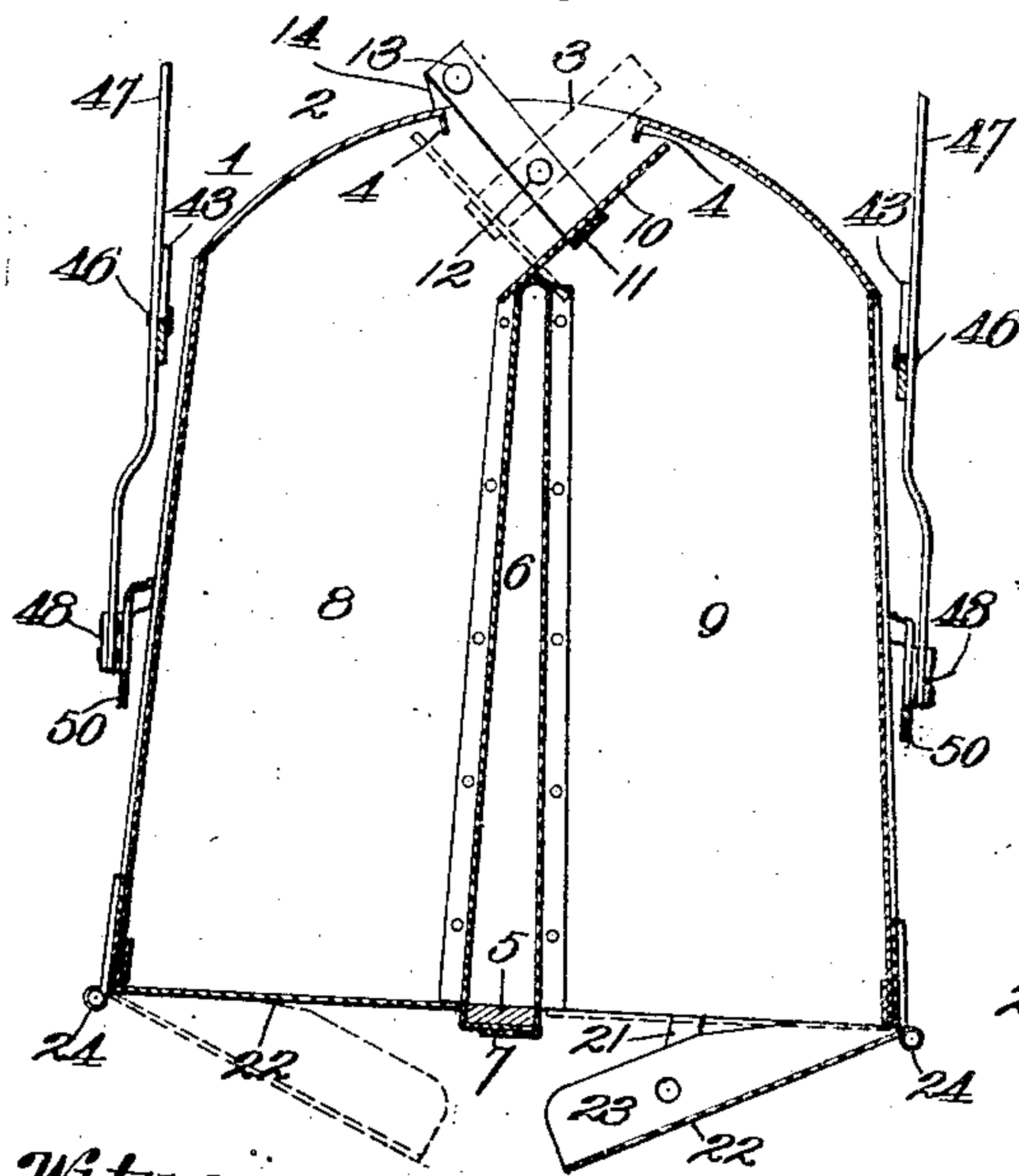
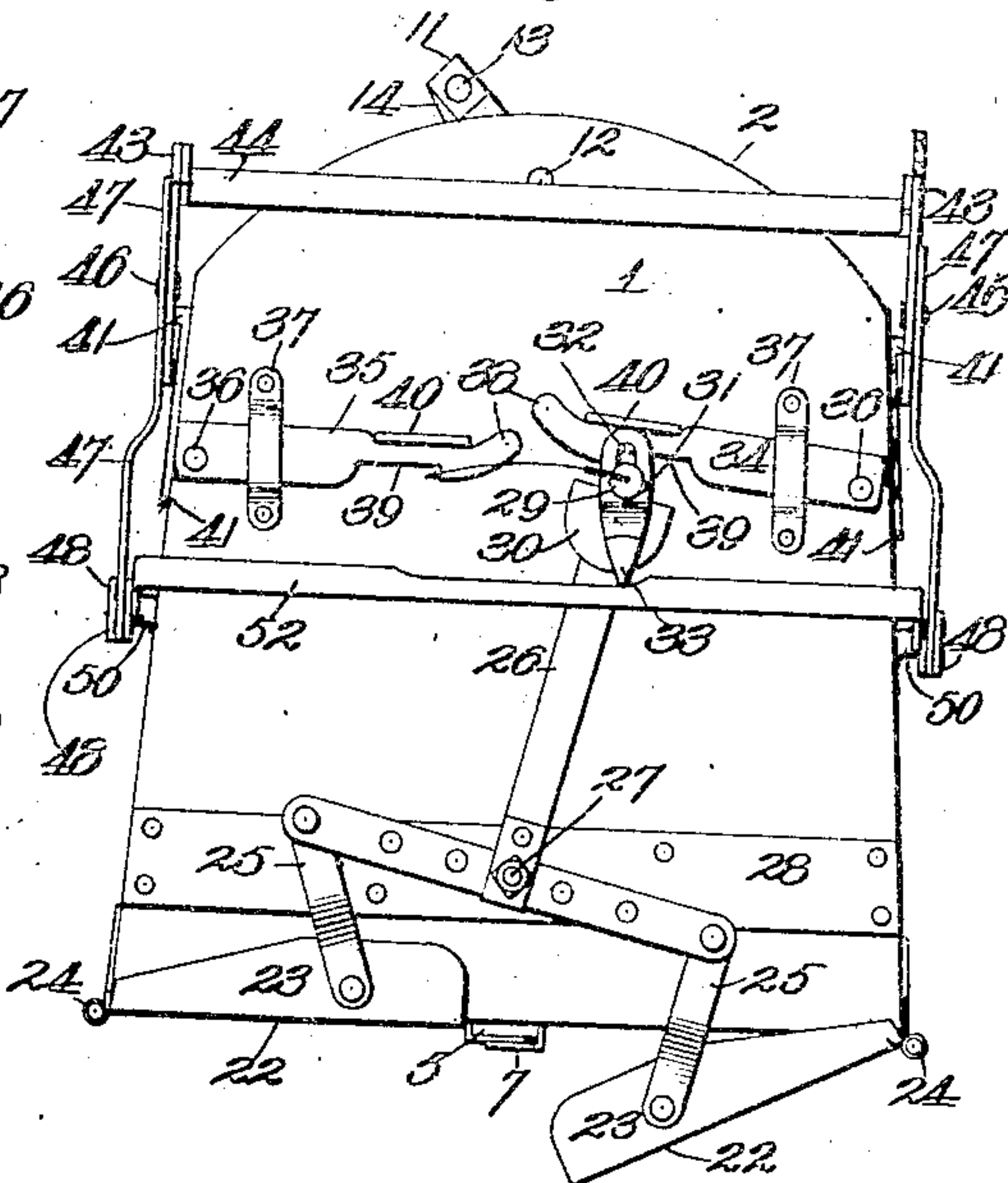


Fig. 6.



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# UNITED STATES PATENT OFFICE.

JAMES S. HERRON, OF HUNTER, OKLAHOMA TERRITORY.

## AUTOMATIC WEIGHER.

No. 822,451.

Specification of Letters Patent.

Patented June 5, 1906.

Application filed June 9, 1905. Serial No. 268,215.

*To all whom it may concern:*

Be it known that I, JAMES S. HERRON, a citizen of the United States, residing at Hunter, in the county of Garfield and Territory of Oklahoma, have invented certain new and useful Improvements in Automatic Weighers, of which the following is a specification.

My invention relates to automatic grain-weighers, and more particularly to that class by which moving grain may be weighed without checking or interfering with its movement; and my object is to produce a machine of this character which operates efficiently and reliably.

With this general object in view the invention consists in certain novel and peculiar features of construction and organization, as hereinafter described and claimed, and in order that it may be fully understood reference is to be had to the accompanying drawings, in which—

Figure 1 is a side view of an automatic grain-weigher embodying my invention. Fig. 2 is an end view of the same. Fig. 3 is a section on the line III III of Fig. 2. Fig. 4 is a view of the opposite end from that disclosed by Fig. 2. Fig. 5 is a vertical section on the line V V of Fig. 1. Fig. 6 is a view of the end of the machine shown by Fig. 2, but with certain operative parts occupying a different position. Fig. 7 is an enlarged detail perspective view of the gravity-catches with one of them engaging a rock-frame hereinafter referred to.

Referring to the drawings in detail, 1 indicates a receptacle formed, preferably, of sheet metal and having an arched top 2, provided with a central opening 3, extending from one end of the receptacle to the other, the arched top at the side margins of said opening being provided with depending flanges 4.

5 indicates a bar disposed centrally of the receptacle and extending from one end to the other, and 6 a central partition extending from one end of the receptacle to the other and rising from bar 5 a suitable distance, said partition being preferably formed of sheet metal bent to inverted-V form, riveted or otherwise secured to the end walls and having its ends underlying bar 5, as shown at 7, and holding said bar in position, said partition dividing the receptacle into chambers 8 and 9.

10 is a deflector extending from one end wall to the other and adapted alternately to

discharge grain entering opening 3 into said compartments. This deflector is carried by a U-frame 11, having its arms pivoted, as at 12, to the end walls of the receptacle vertically above partition 6. One of said arms projects through opening 3 and is pivoted, as at 13, to the upper end of a rock-frame 14, fulcrumed in the plane of the center of the receptacle to the bracket 15, secured externally to the contiguous end wall, the lower end of said rock-frame having a slot 16 engaging a pin 17 on the upper end of the stem of an inverted-T-shaped rock-frame 18, pivoted, as at 19, to the reinforce or strengthening-plate 20, secured to the outer side of said end wall.

21 indicates links pivotally connecting the ends of the head of said inverted-T-shaped rock-frame to upwardly-projecting flanges 23 of the doors 22, which are hinged, as at 24, to the lower ends of the side walls of the receptacle.

25 indicates similar links pivotally connected to the flanges 23 at the opposite ends of the doors, the upper ends of links 25 being pivoted to opposite ends of the head of an inverted-T-shaped rock-frame 26, pivoted, as at 27, externally to the reinforce or strengthening-plate 28, secured externally to the other end wall of the receptacle.

29 indicates a headed pin projecting outward from the stem of frame 26, and 30 indicates a spacing-plate or washer secured to the outer side of said frame just below the pin and holding out from the latter a trip-dog 31, provided with a slot 32, engaging said pin and held thereon by its head, the lower end of the trip-dog being formed with a downwardly-tapering tooth 33.

34 and 35 indicate gravity-catches pivoted at their outer ends, as at 36, to the adjacent end wall of the receptacle in the vertical plane of spacing-plate or washer 30, and 37 indicates clips secured to said end wall and fitting over said gravity-catches to hold them in operative relation to the remaining mechanism at all times. The inner ends of the gravity-catches are preferably curved upward, as at 38, and their lower edges are provided with notches 39 for alternate engagement with pin 29, said catches being also formed with outwardly-projecting flanges 40 above said notches, to be alternately engaged by the trip-dog, as hereinafter explained.

41 indicates brackets secured to the sides of the receptacle in the plane of its center, and



42 represents pivot-pins projecting from said brackets and pivotally engaging the scale-beam frame 43, said scale-beam frame comprising parallel bars connected by a cross-bar 44; one of the bars 43 by preference being of greater length than the other and carrying an adjustable poise 45. Said scale-beam frame is fulcrumed, as at 46, on vertical hangers 47, attached at their upper ends to any suitable support. (Not shown.)

48 designates arms formed integral with or secured rigidly to the lower ends of hangers 47 and pivotally connected, as at 49, to the U-shaped trip-frame, the arms 50 of said frame being pivoted, as at 51, to the side walls of the receptacle near the end opposite from the trip and gravity-catches, the bridge portion 52 of said frame paralleling the end walls and disposed in the vertical plane of said trip-dog, as shown in Figs. 1 and 3.

Assuming that the receptacle is empty, it will be seen that the poise set on the scale-beam to respond to a certain weight of grain in the receptacle holds the latter elevated, and as the parts are disposed the door 22 at the bottom of compartment 8 is closed and the companion door at the bottom of compartment 9 is open, said doors being locked in the positions stated, because the notch of gravity-catch 34 is in engagement with the headed pin 29, as shown most clearly in Fig. 7. When the doors are in the positions described, the deflector extends downwardly and to the left from a point to the right of flange 4 over compartment 9 to the opposite side of the partition. Now as the grain falls through opening 3 upon the deflector the latter deflects it into compartment 8, wherein it accumulates until it overbalances the poise. As the poise rises with the beam the receptacle swings downward from fulcrum-point 46, and as a result of such downward movement the trip-frame rocks on its fulcrum 49 until its bridge portion 52 strikes the lower end of the tapered tooth 33 of trip-dog 31 and slides said dog upwardly and causes it by upward pressure on flange 40 of gravity-catch 34 to swing said catch upward until its notch 39 is disengaged from the headed pin 29; which action unlocks the hinged doors and permits the weight of the grain upon the closed door to open the same and effect the closure of the other door, thereby rocking frames 18 and 26. As frame 26 is thus rocked while gravity-catch 34 is elevated headed pin 29 strikes the curved lower edge of gravity-catch 35 and raises the same until said pin enters the notch 39 of said catch, when the latter drops to its original position, and thereby automatically locks the doors in their new position. The rocking action of frame 26 is of course accompanied by similar action on the part of frame 18, which in turn, through the pin-and-slot connection with rock-lever 14, swings the

deflector to the position shown in dotted lines, Fig. 5, so that it shall deflect the grain entering opening 3 into compartment 9, wherein it accumulates and eventually causes a repetition of the operations above described.

In order that the upward movement of the trip-frame may continue after upward movement of the gravity-catch, against which said trip-frame is pressing the trip-dog, ceases, said trip-dog is mounted on the headed pin so as to be capable of swinging thereon. When thus arranged, there is no possibility of a frictional engagement between the trip-frame and trip-dog which will interfere with the operation of the rock-frames as soon as they are released by the tripping of the gravity-catch engaging the headed pin.

As the grain will escape from compartment 8 much more rapidly than grain enters compartment 9 from the source of supply, the weight of the poise is sufficient immediately after the door of the compartment 8 is opened to gradually reelevate the receptacle to its original position, and thereby lower the trip-frame to its original position to permit the gravity-dog to again assume a pendent position, as shown in Fig. 2, so that it will be ready for the next rise of the trip-frame. This automatic weigher may be used in connection with a threshing-machine or with any other suitable grain-discharging apparatus, it being understood, of course, that the quantity of grain passing through the receptacle may be registered in any suitable manner.

From the above description it will be apparent that I have produced an automatic grain-weigher embodying the features of advantage enumerated as desirable and which obviously may be modified in its form, proportion, detail construction, and arrangement of the parts without departing from the principle of construction involved.

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

1. An automatic grain-weigher, comprising hangers, a scale-beam fulcrumed thereon, a receptacle suspended from the beam, a trip-frame pivoted to the receptacle and fulcrumed on the hangers, a door carried by the receptacle and closed and locked when the latter is overbalanced by the beam, and means when the beam is overbalanced by weight on the door, to be actuated by the trip-frame to unlock said door and permit the weight thereon to open it.

2. An automatic grain-weigher, comprising hangers, a scale-beam fulcrumed thereon, a receptacle suspended from the beam, a trip-frame pivoted to the receptacle and fulcrumed on the hangers, a door carried by the receptacle and closed and locked when the latter is overbalanced by the beam, means when the beam is overbalanced by weight on the door, to be actuated by the trip-frame to unlock



said door and permit the weight thereon to open it, and means to lock the door open.

3. An automatic weigher, comprising a scale-beam, a suitable receptacle carried thereby and having two compartments, doors controlling the lower ends of the compartments, rock-frames linked to the doors, a pin projecting from one of the rock-frames, a gravity-catch engaging said pin, a trip-dog suspended from said pin and underlying a part of said gravity-catch, means when the weight of the commodity in the receptacle effects the overbalancing of the beam, to cause the dog to trip said catch from engagement with the pin and permit the closed door to open and the open door to be closed, and a similar catch to automatically engage said pin and lock said doors in their new relation.

4. In an automatic weigher, a suitable receptacle having two compartments, doors controlling the discharge ends of said compartments, a rock-frame linked to said doors, a pair of gravity-catches carried by the receptacle, one of them engaging the rock-frame to lock one of the doors closed and the other

open, a vertically-movable dog carried by the rock-frame, and means caused by downward movement of the receptacle to raise said dog and cause it to trip the catch from engagement with the rock-frame and permit the closed door to be opened and the open door to be closed and the rock-frame to engage and be locked with the doors in this new position by the other catch.

5. In an automatic weigher, a suitable receptacle provided with two compartments and a hinged door controlling each compartment, a rock-frame mounted on the receptacle and linked to said doors, a pin projecting from said rock-frame, a slotted dog pivotally suspended from said pin, and means actuated by the downward movement of the receptacle for imparting upward movement to said dog.

In testimony whereof I affix my signature in the presence of two witnesses.

JAMES S. HERRON.

Witnesses:

JACOB C. HELL,

FRED. W. PICKEREL.