

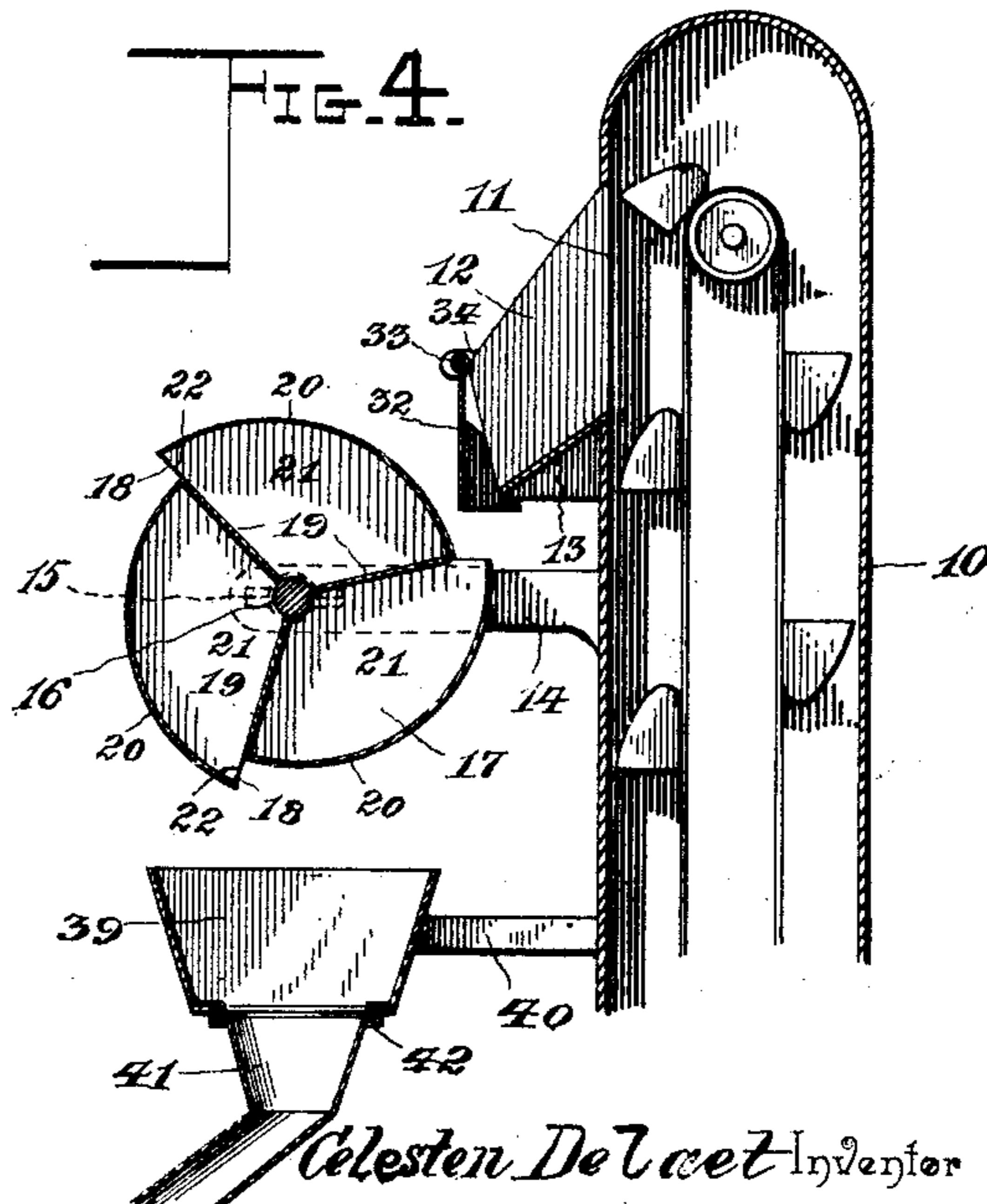
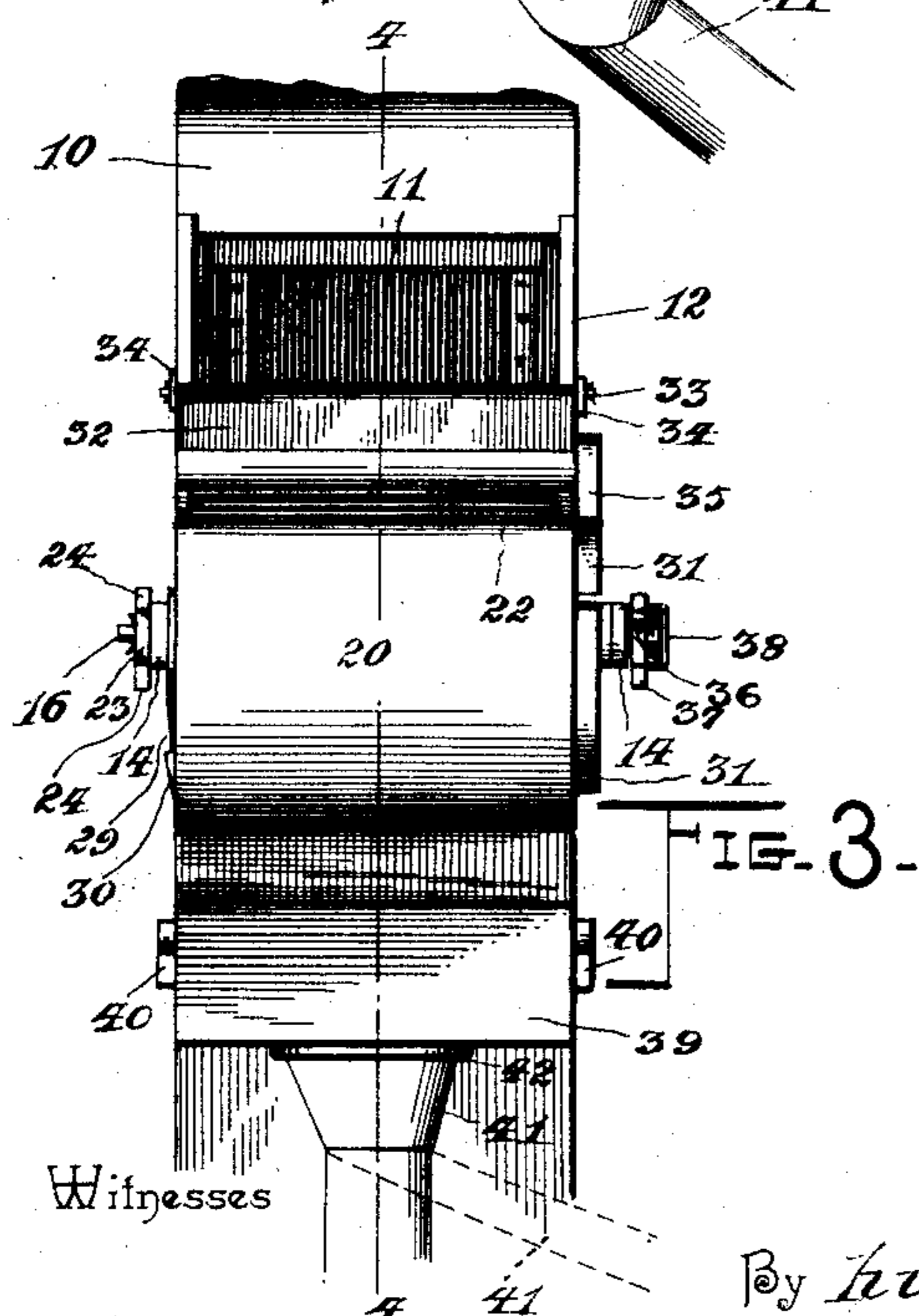
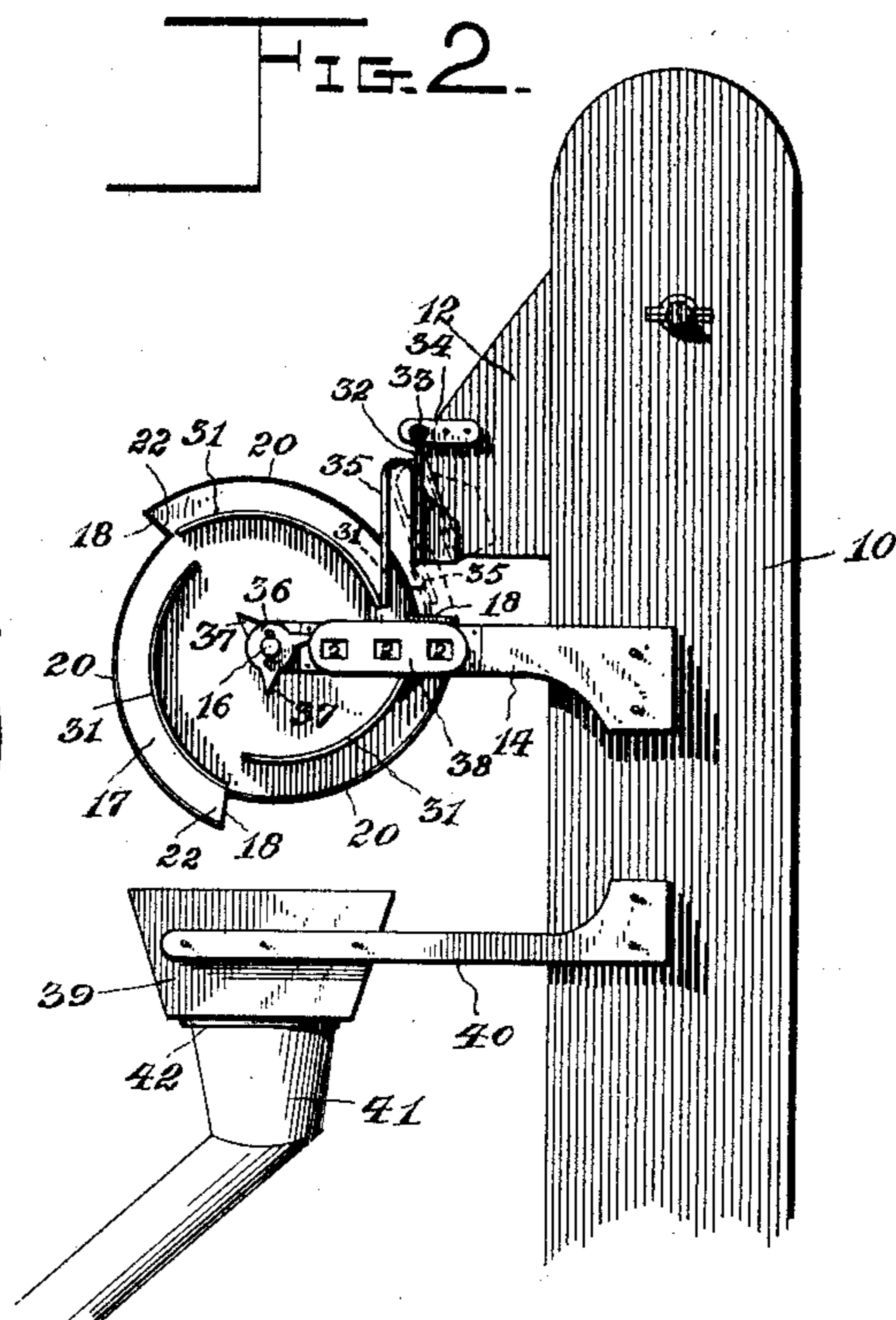
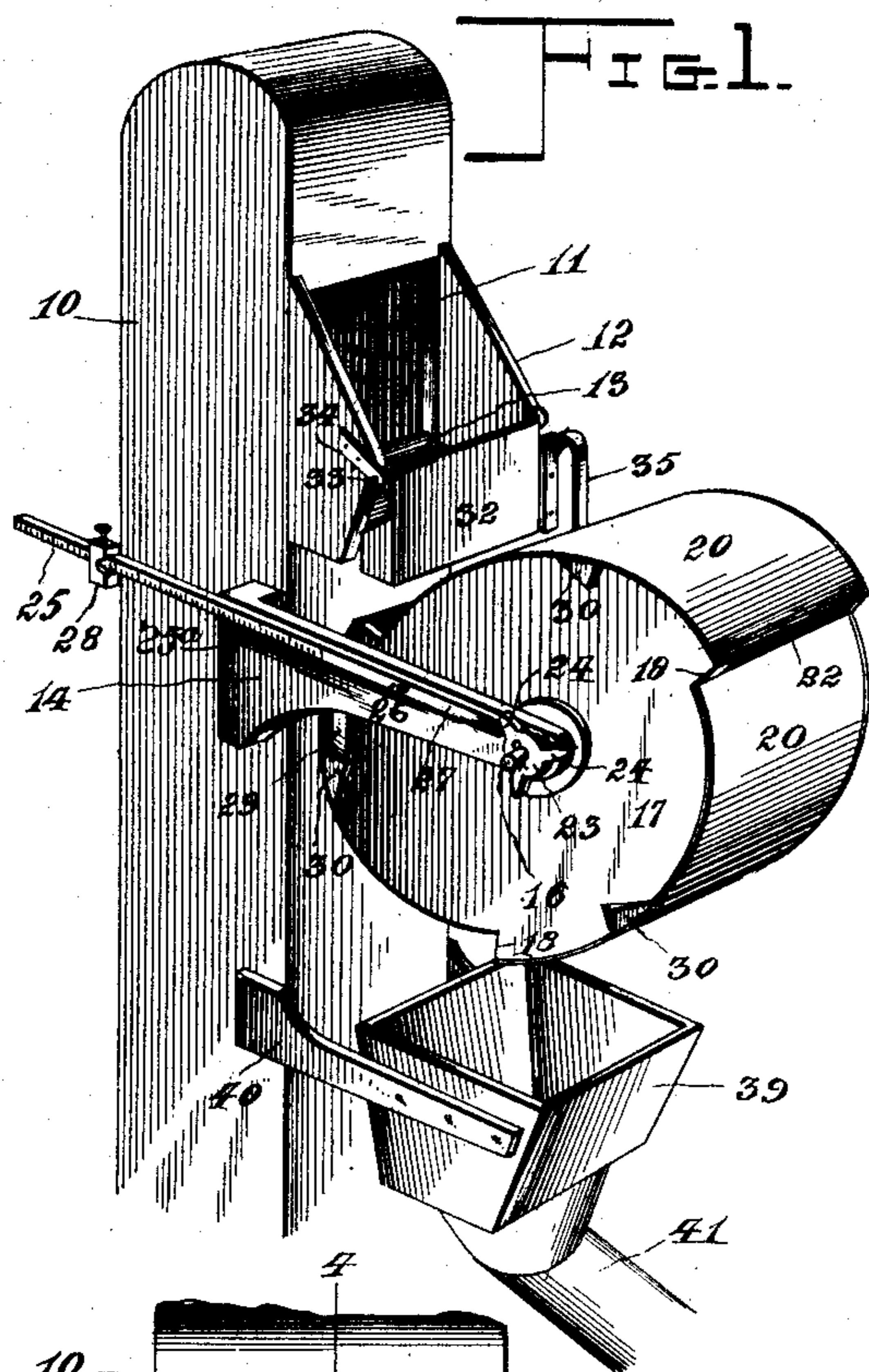
No. 628,926.

Patented July 18, 1899.

C. DELAET.  
WEIGHING MACHINE.

(Application filed Dec. 31, 1898.)

(No Model.)



Witnesses

John F. Deufferwiel  
H. J. Beuchamp

By his Attorneys,

Celesten Delaet Inventor  
C. A. Snow & Co.

# UNITED STATES PATENT OFFICE.

CELESTEN DELAET, OF SHELBY, NEBRASKA.

## WEIGHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 628,926, dated July 18, 1899.

Application filed December 31, 1898. Serial No. 700,777. (No model.)

*To all whom it may concern:*

Be it known that I, CELESTEN DELAET, a citizen of the United States, residing at Shelby, in the county of Polk and State of Nebraska, have invented a new and useful Weighing-Machine, of which the following is a specification.

My invention relates to improvements in automatic weighing-machines; and one object in view is to provide a simple and efficient mechanism which may readily be adapted to an ordinary elevator to receive grain therefrom, determine by weight the proper quantity of grain, and deliver the latter to a suitable vehicle or car, the apparatus being actuated solely by gravity, and thereby dispensing with a power mechanism.

A further object of the invention is to provide the weighing mechanism with means which checks or retards the partial rotation of a pocketed drum at a proper point to receive grain from the elevator, to provide means for positively shutting off the flow of grain when one pocket in the drum shall have become filled and the drum is partially rotated on its axis to bring another pocket into position below the elevator-spout, and to provide a delivering device which may be adjusted to discharge the grain into the desired direction.

With these ends in view the invention consists in the novel construction and arrangement of parts and in the combination of devices which will be hereinafter fully described and claimed.

To enable others to understand the invention, I have illustrated the same in the accompanying drawings, forming a part of this specification, and in which—

Figure 1 is a perspective view of a grain-weighing machine embodying my invention and showing it applied to a part of a grain-elevator. Fig. 2 is an elevation looking at the reverse side of the machine from Fig. 1. Fig. 3 is a front elevation, and Fig. 4 is a vertical sectional elevation on the plane indicated by the dotted line 4 4 of Fig. 3.

Like numerals of reference denote like and corresponding parts in each of the several figures of the drawings.

My weighing-machine may be used in con-

nection with any ordinary elevator, and in the drawings the boot or casing of the elevator is represented at 10. As no novelty for the elevator or its casing is set up in this application, I do not consider it necessary to specifically describe these parts. As is usual, the head of the elevator boot or casing has a delivery-opening 11, and the spout 12 partially surrounds this delivery-opening in order that the grain which may be discharged by the elevator through the opening 11 may pass into the spout 12, that serves to direct the grain into the revoluble pocketed drum, which forms one of the elements of my weighing-machine. The spout 12 is provided with an inclined bottom 13, which overhangs the pocketed drum, and said drum is supported by horizontal brackets or arms 14, which are firmly secured to the boot or casing 10 on opposite sides thereof. These brackets or arms are provided with journal-bearings 15, which receive the transverse shaft 16 of the revoluble drum. The drum of my invention is constructed peculiarly to provide a plurality of pockets which are equal in capacity and receive the grain from the spout through off-standing open mouths that are presented successively to the spout on the rotation of the drum. This drum consists of the head 17, provided with the offsets 18 at equidistant points, the partitions 19, and the shell-sections 20. The partitions are suitably secured within the drum to form, with the heads and the shell-sections, a plurality of pockets or compartments 21, and the sections 20 of the shell or casing are secured to the offset edges of the head 17 in order to make the sections 20 occupy an eccentric relation to the drum-shaft. It will be observed that each section of the shell or casing extends from the abrupt edge of one pair of offsets 18 on the drum-heads to the outer edges of the next adjacent pair of offsets 18, and the contiguous edges of the sections 20 of the casing are thus disposed a short distance from each other to provide the open mouth 22. A series of these open offset mouths 22 are provided around the drum, and each mouth opens into one of the pockets or compartments 21 of the drum. The drum-head 17 is secured firmly to the shaft 16 in order that the shaft and the drum may rotate

together, and this shaft is fitted properly in the bearings of the brackets 14 in a manner to actuate the scale-lever and the register.

One end of the drum-shaft is extended beyond its bearing for the reception of an armed operating-plate 23, which is secured firmly to the shaft to rotate therewith, and this operating-plate has a series of radial fingers 24, which correspond in number to the pockets of the drum. The graduated scale-lever 25 is fulcrumed at a point intermediate of its length, as at 26, to one of the brackets or arms in a manner to provide a short arm 27 on said lever, and an adjustable weight 28 is fitted to and adapted to be clamped on the long arm of the scale-lever, so as to be shiftable thereon toward or from the fulcrum 26. The short arm 27 of the scale-lever lies in the path of the radial fingers on the plate 23, and when one compartment of the drum has been filled with grain up to the desired quantity the weight of the grain causes the finger on the plate 23 to lift the lever against the gravity of the counterpoise 28, thereby tripping the lever and permitting the finger of the plate 23 to clear the short lever-arm in order that the drum may rotate partially to discharge the grain from the filled pocket and to present an empty pocket in position below the spout 12 to receive the grain from the latter.

To overcome any tendency of the revoluble pocketed drum from moving in a backward direction after or during the discharge of the grain from its filled pocket, and thereby move the drum to a position where the mouth 22 of the pocket which should receive the grain would be out of alinement with the spout, I provide a detent mechanism, which consists of a check-spring 29 and a series of spaced lugs 30. These lugs are on one of the drum-heads at a proper distance from the offset portions 18 thereof and from the open mouths 22. The spring 29 is supported by one of the brackets or arms 14 to lie in the path of the lugs 30 and at a proper distance below the position assumed by the mouth on the drum when it is in operative relation to the spout 12.

The head of the drum opposite to the head having the lugs 30 is provided with a series of cams 31, arranged eccentrically one to the other and parallel to the sections 20 of the drum shell or casing, and these cams are adapted to actuate a valve 32, that is arranged across the spout 12. The valve 32 is carried by a rod 33, which is supported in bearing-plates 34, attached to the sides of the spout 12, and the edges of this spout are inclined or beveled, so that the valve may be pressed against the same in order to securely close the spout during the period of rotation of the pocketed drum. The valve is hung so that it will open by gravity, and in order to close the valve automatically across the spout I provide it with a yieldable arm 35, which is adapted to ride upon either of the series of cams 31. The arm 35 consists, preferably, of

a spring that is secured to the gravity-valve 32, and this arm depends from the valve to assume a position where it will ride upon the cams 31 successively. When the drum assumes a position for the mouth of one of its pockets to lie immediately below the spout 12, the yieldable arm 35 is free from engagement with the cams and the valve opens by gravity for the grain to pass from the spout into the pocket of the drum. As the drum begins to turn, owing to the accumulation of a proper quantity of grain in its pocket to overcome the counterpoise on the scale-lever, one of the cams 31 engages with the arm 35 to close the valve 32 across the spout 12, thereby shutting off the continued flow of grain from the spout to the drum, and this cam remains in engagement with the valve-arm until the drum rotates sufficiently to present the mouth of an empty pocket below the spout, at which time the cam clears the arm 35 and the valve again opens by gravity.

To the end of the drum-shaft opposite to the operating-plate 23 is secured a register-wheel 36, that is constructed with a series of teeth 37, corresponding in number to the pockets of the drum. The wheel 36 is actuated on the rotation of the drum, and its teeth operate the totalizing-wheels of a register 38. In practice the revoluble drum may have its pockets or compartments proportioned to receive and contain a half-bushel of grain, and the register-wheel 36 is actuated each time that a half-bushel of grain is discharged from the drum; but it will be understood that the capacity of the drum may be varied and the indication by the register is correspondingly changed.

The revoluble drum discharges its contents into a hopper 39, which is arranged below the drum and is supported by arms or brackets 40, secured to the elevator boot or casing 10. This hopper supports a chute 41, which is arranged to receive from the bottom of said hopper, and to enable the grain to be discharged in any desired direction the chute 41 is connected adjustably, as at 42, to the hopper. The angle of the chute in relation to the hopper may be changed to deliver the grain at either side or at the front end of the weighing mechanism, and this chute is thus adapted to properly deliver the grain into a wagon or car.

In order to prevent the scale beam or lever from dropping out of operative position, I provide a stop pin or shoulder 25<sup>a</sup>. This pin or shoulder is arranged, preferably, on the bracket 14, as shown by Fig. 1, slightly below the horizontal plane of the lever-fulcrum 26, so as to lie in the path of the lever or beam 25 for the lever to rest on the stop pin when it is free from the lugs of the armed plate 23.

Changes may be made in the form and proportion of some of the parts, while their essential features are retained and the spirit of the invention embodied. Hence I do not desire to be limited to the precise form of all

the parts as shown, reserving the right to vary therefrom.

Having thus described the invention, what I claim is—

5 1. In a grain-weighing machine, the combination with a spout, and a revoluble pocketed drum, of a flap-valve hung on the spout across the mouth thereof and arranged to open by gravity, a series of elongated cam-surfaces fast with the drum at one end thereof,  
10 and a yieldable arm movable with said valve and riding upon the cam-surfaces during the period of rotation of the drum to positively close said valve when the drum is rotated,  
15 substantially as described.

2. In a grain-weighing machine, a revoluble drum having the sections of its shell or

casing arranged eccentrically and forming a series of offstanding, open mouths which communicate with pockets or compartments in 20 the drum, in combination with a spout to which the open mouths of the pocketed drum are presented successively, a valve mechanism for the spout, and a scale-beam operatively connected to the drum, substantially 25 as described.

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

CELESTEN DELAET.

Witnesses:

HARVEY C. BEEBE,

A. S. LAMKIN.