

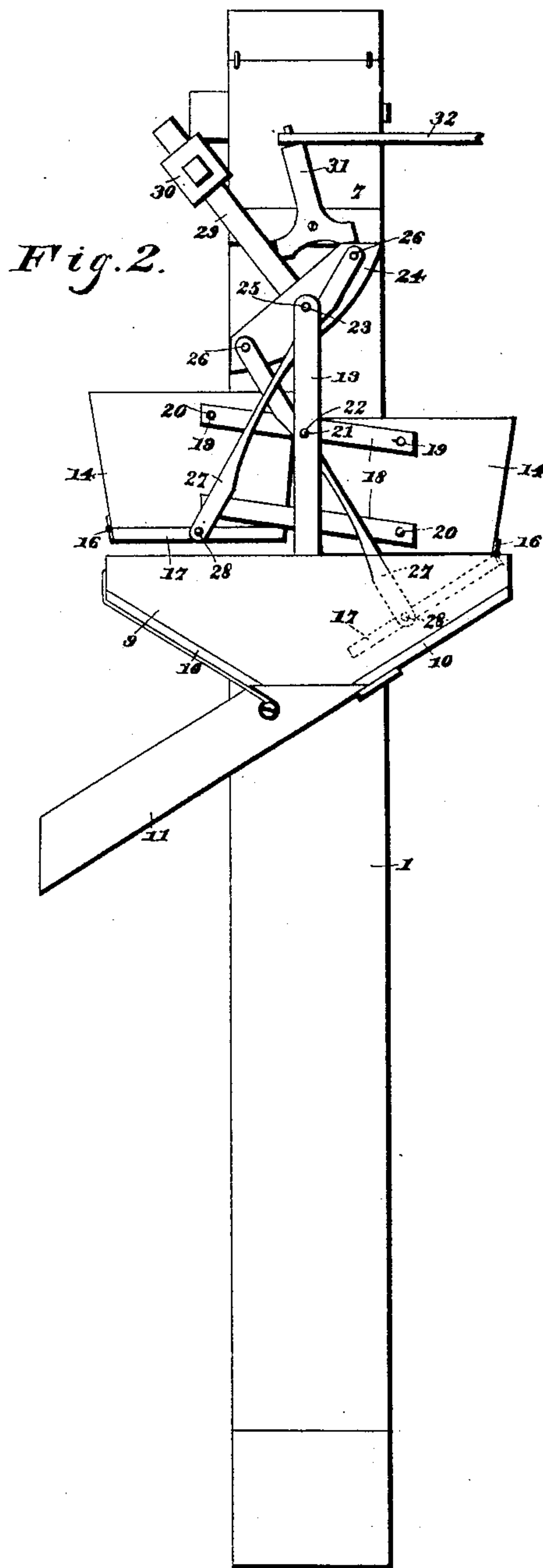
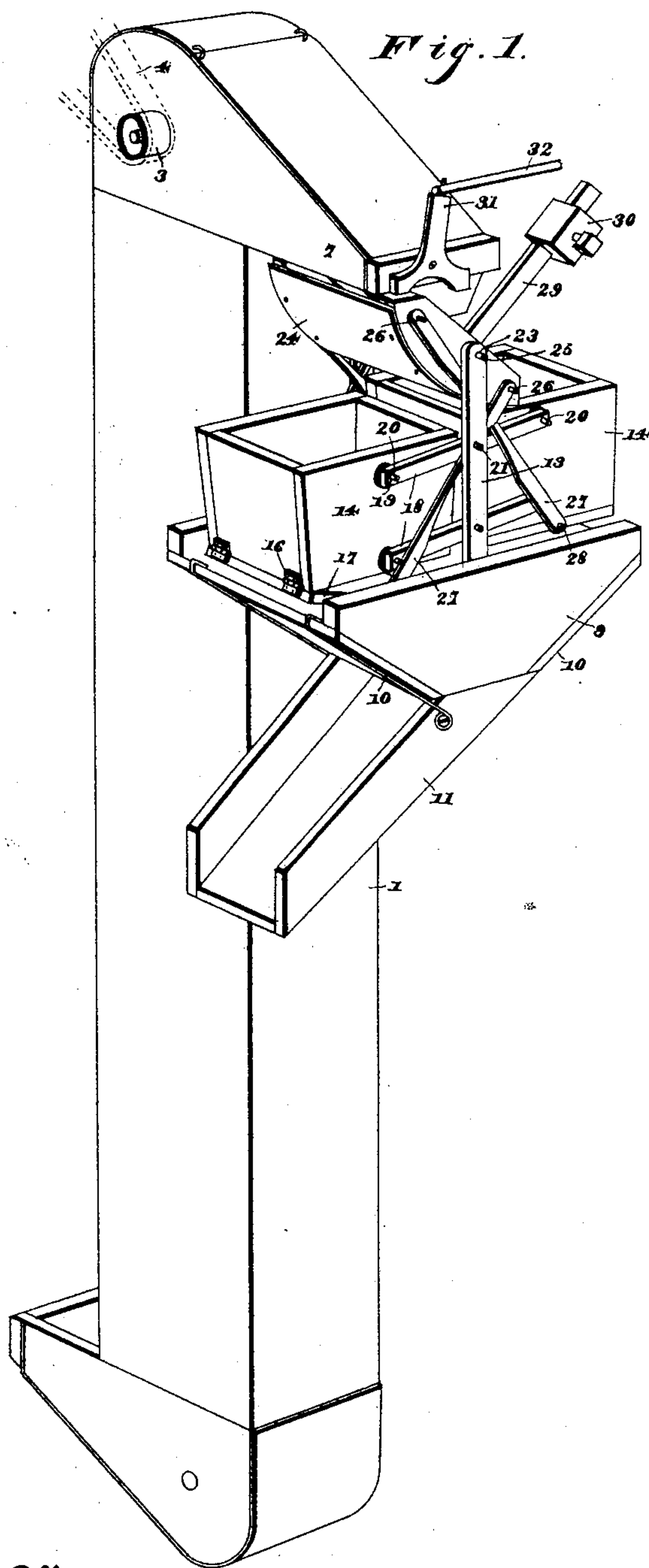
(No Model.)

2 Sheets—Sheet 1.

M. A. KIDDER.
GRAIN METER.

No. 424,483.

Patented Apr. 1, 1890.



Witnesses;

J. M. Withers

W. J. Duval

Inventor

Melvin A. Kidder,

By his Attorneys

C. A. Snow & Co.

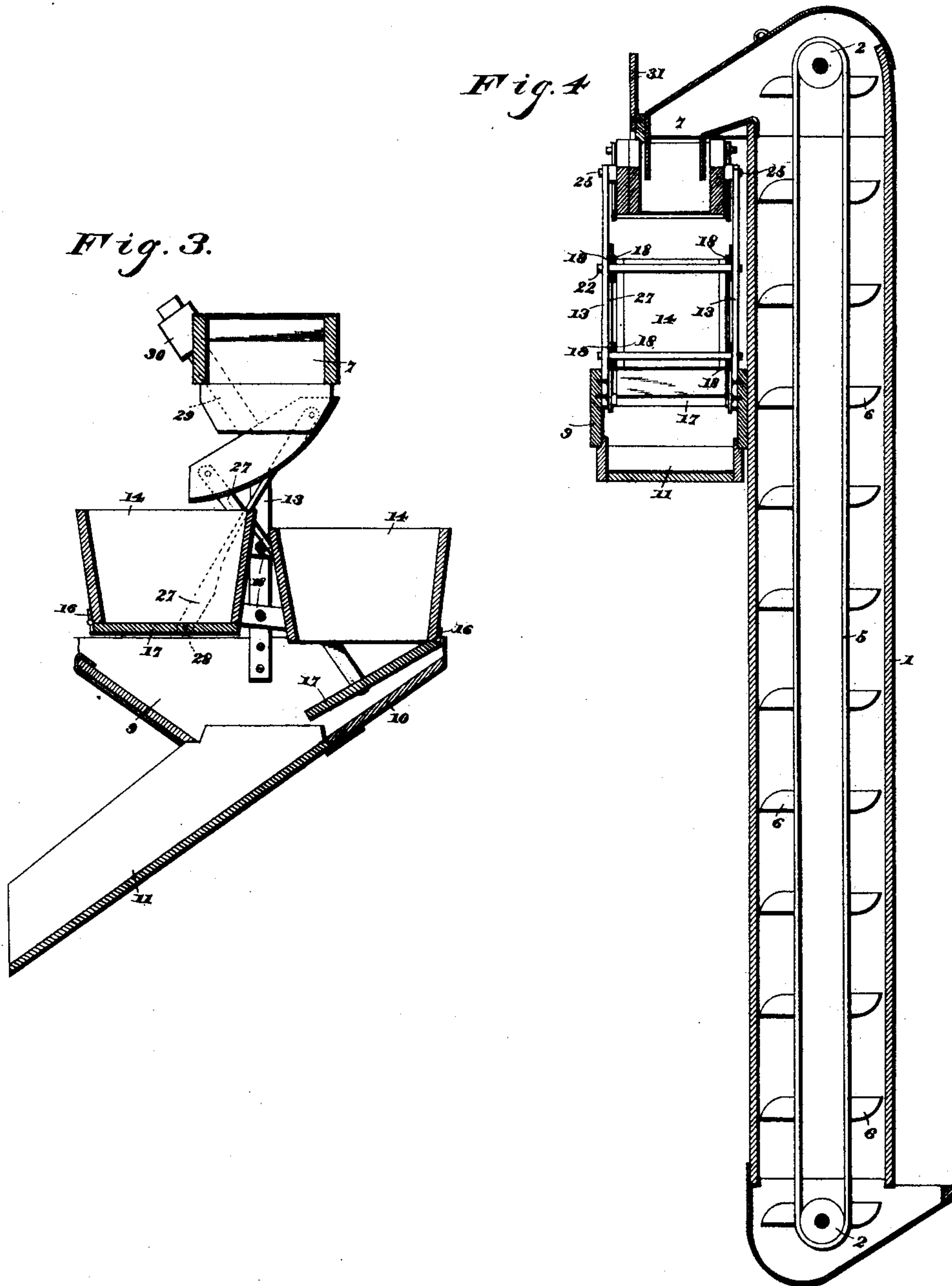
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UNITED STATES PATENT OFFICE.

MELVIN A. KIDDER, OF YOUNGSTOWN, ILLINOIS.

GRAIN-METER.

SPECIFICATION forming part of Letters Patent No. 424,483, dated April 1, 1890.

Application filed June 27, 1889. Serial No. 315,847. (No model.)

To all whom it may concern:

Be it known that I, MELVIN A. KIDDER, a citizen of the United States, residing at Youngstown, county of Warren, and State of Illinois, have invented certain new and useful Improvements in Grain-Scales, of which the following is a clear and exact specification.

This invention has relation to a combined grain scale and conveyer; and the objects and advantages of the same, together with the novel features thereof, will hereinafter appear, and be particularly pointed out in the claims.

Referring to the drawings, Figure 1 is a perspective of an apparatus constructed in accordance with my invention. Fig. 2 is a front elevation of the same. Fig. 3 is a vertical section, and Fig. 4 a vertical longitudinal section.

13 represents a vertical standard, the lower end of which is secured to the front wall of the bin 9. A similar standard 13 projects from the rear wall of the bin 9, and is rigidly secured to the front wall of the shaft 1.

14 represents a pair of buckets or weighing-bins, the bottoms 17 of which are provided with hinged connections 16, occurring at the outer ends thereof, and the pair of buckets are pivotally connected at each side by opposite pairs of straps 18, in the ends of which are formed openings 19, in which take bearing-studs 20, projecting from the sides of the buckets. Stud 21 project from the centers of the straps and take into bearing-openings 22, formed in the vertical standards 13.

In the upper ends of the standards 13 are formed bearing-openings 23, and between the same there is pivotally mounted an oscillating delivery-hopper 24, provided at its opposite sides with studs 25, taking into said openings. Stud 26 are also provided near the ends of the hopper and at each side thereof, and loosely mounted on the same are the upper ends of opposite pairs of diagonally-disposed straps 27, the lower ends of the straps after crossing each other being pivotally connected to studs 28, projecting from the hinged bottoms 17 of the bins or weighing-buckets.

29 represents a scale-beam, which projects from the hopper 24, and upon the same is mounted an adjustable weight 30.

31 represents a pivoted oscillating arm adapted to be struck and oscillated by the

scale-beam and operate a shaft 32 for operating a tally-box, and thus indicating the number of oscillations of the scale-beam.

The operation of my invention is as follows:

The weight having been adjusted upon the beam so that it will be counterbalanced by the desired quantity of grain delivered into the buckets or bin, the machinery is started and the elevator-bucket carries the grain up and delivers the same into the oscillating hopper, which, being inclined to one side by reason of the weight, delivers the grain into the bucket at that side, and when a sufficient quantity of grain has been deposited in the bucket to overcome the weight the hinged bottom of the bucket falls and as it falls oscillates the hopper so that the grain is delivered into the opposite bin or bucket, and during the operation the previously-filled bin or bucket is discharged into the fixed bin 9, and the grain is then carried off by the chute. When a sufficient quantity of grain has been deposited into the second bucket, the bin lowers and its bottom falls, and as it falls by reason of the diagonal straps connecting the same with the opposite end of the oscillating hopper said hopper is again turned or oscillated so as to deliver grain again into the first bucket, which has been raised to the receiving-point and its bottom elevated or closed. In this manner grain may be automatically weighed, and the weight of grain in one bucket serves to weigh the grain and operate the opposite bucket, and by the tally-box, which may be of any usual construction, the number of bushels may be predetermined and the supply stopped at the proper time.

Having described my invention, what I claim is—

1. In a grain-scale, the combination, with a pair of bins pivotally connected and balanced and provided with hinged bottoms, of an oscillating hopper mounted above the bin, and diagonal straps pivotally connecting the ends of the hopper with the bottoms of the opposite bins, substantially as specified.

2. In a grain-scale, the combination, with a fixed bin, of vertical standards rising from the bin, opposite buckets or bins mounted between the standards, opposite pairs of straps pivotally connecting the buckets and having studs taking bearing in openings formed in

the standards, an oscillating hopper pivoted in the upper ends of the studs, hinged bottoms secured to the opposite buckets, and diagonally-arranged straps crossing each other
5 and having one end secured to the side of the hopper and their opposite ends to the sides of the opposite buckets, substantially as specified.

3. In a grain-scale, the combination, with a discharge-bin or other support, of an oscillating delivery-hopper, standards for supporting the same, mounted on the bin or support, a scale-beam projecting from the hopper, an oscillating lever secured at one side of the beam, a tally-box-operating arm
10 adapted to be actuated by said lever, and means, substantially as specified, for oscillating the hopper.

4. The combination, with a stationary bin and the vertical standards projecting from
20 the sides of the bin, of a pair of buckets having hinged bottoms mounted between the

standards and provided with opposite pairs of studs, straps loosely connecting the studs and having central studs taking bearing in openings formed in the standards, an oscillating
25 hopper provided with studs at opposite sides and taking bearing in the openings formed in the standards, opposite straps crossing each other and having their upper ends loosely connected with studs projecting from the op-
30 posite sides and at each end of said hopper, and having their opposite ends connected to studs projecting from the bottoms of oppositely-located buckets, a scale-arm projecting
35 from the oscillating hopper, provided with adjustable weight, and a pivoted lever adapted to be actuated by the scale-arm and actuate the tally-box, substantially as specified.

MELVIN A. KIDDER.

Witnesses:

J. W. BOND,

HENRY H. KIDDER.