

Grain-Meter.

No. 221,083.

Patented Oct. 28, 1879.

FIG. 1.

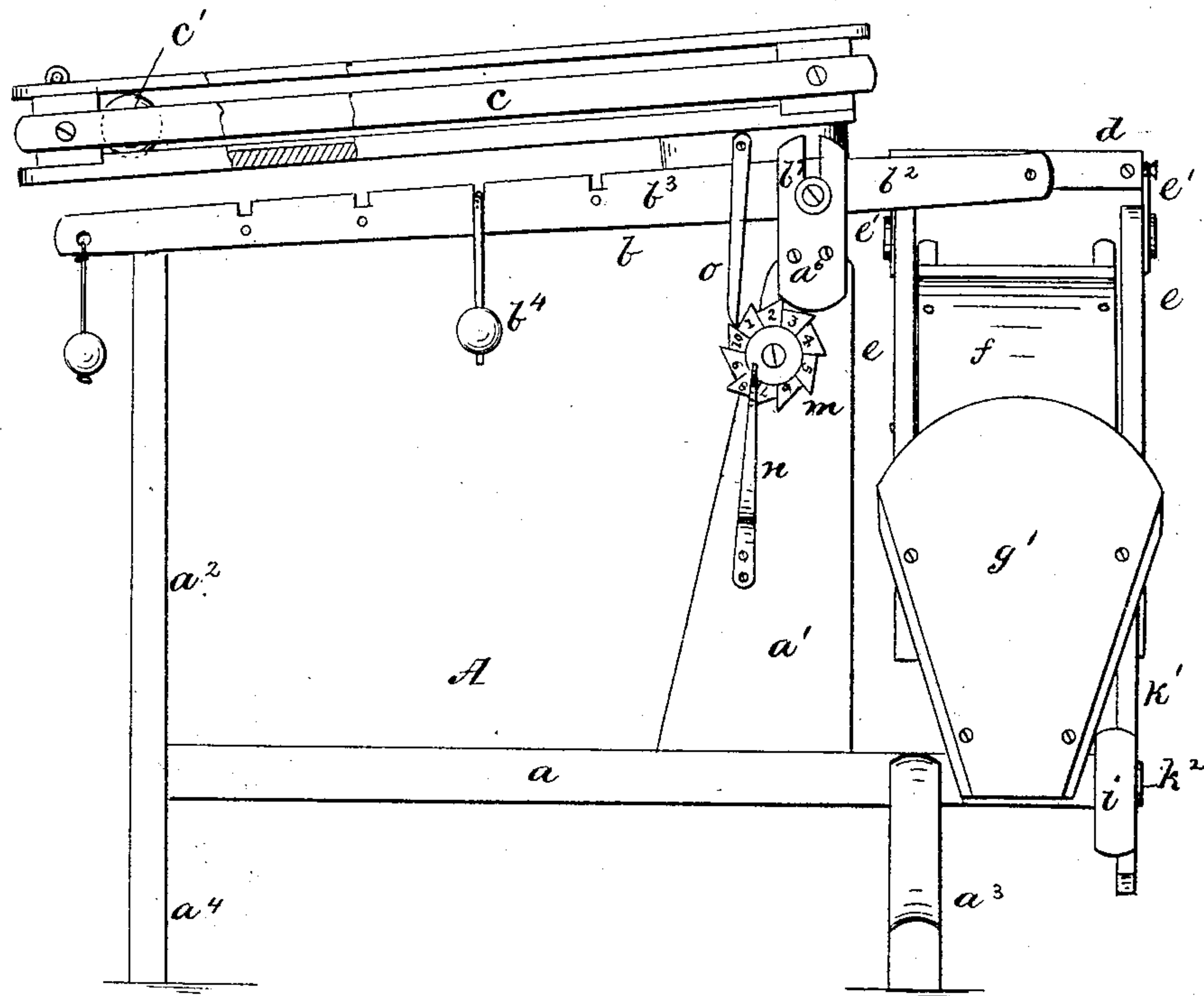
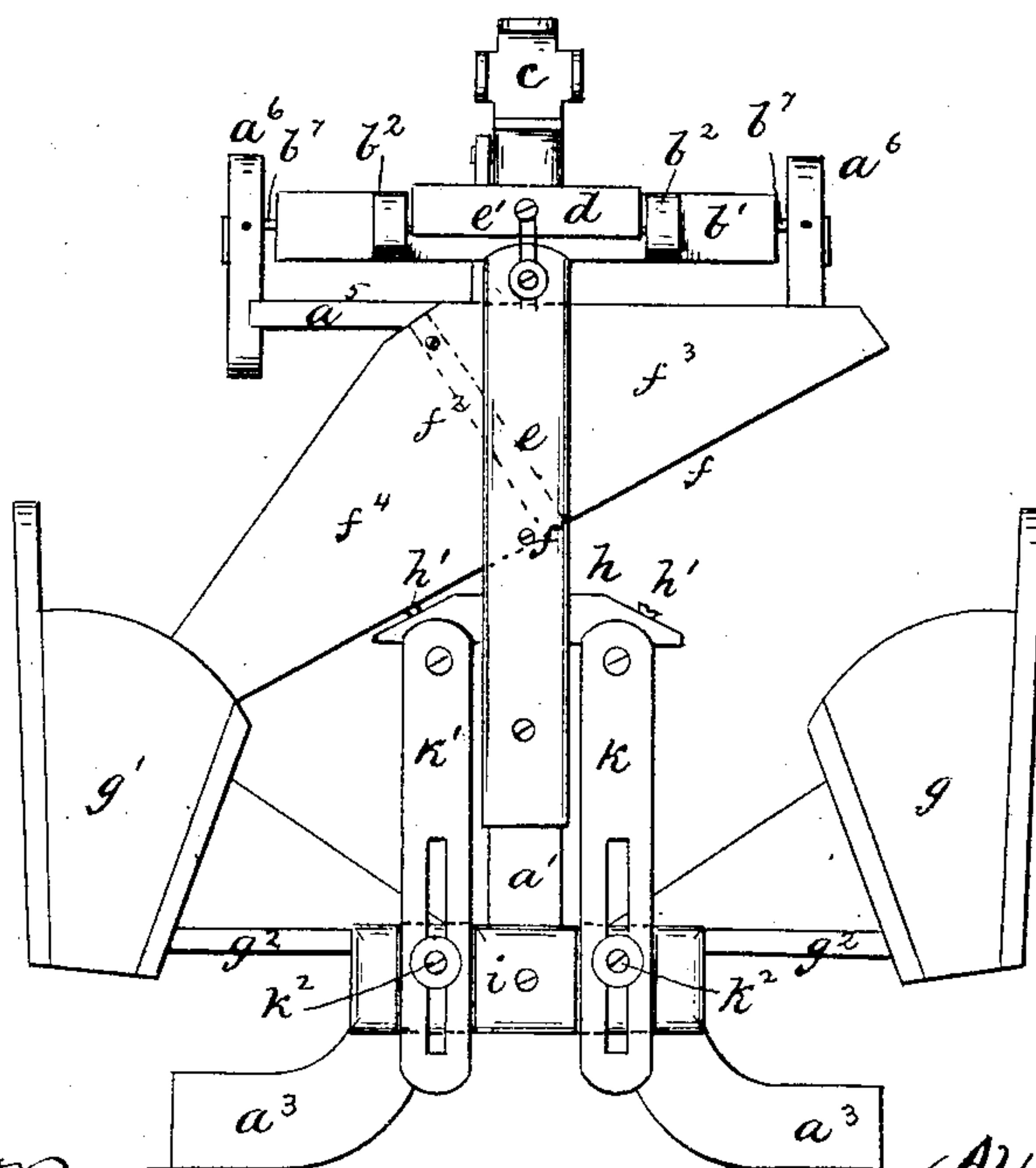


FIG. 2.



WITNESSES

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ALPHEUS LOWMILLER, OF JEWETT, ASSIGNOR TO HIMSELF, JOHN LOWMILLER, OF SAME PLACE, AND SAMUEL STENGER, OF KILGORE, OHIO.

IMPROVEMENT IN GRAIN-METERS.

Specification forming part of Letters Patent No. **221,083**, dated October 28, 1879; application filed April 20, 1879.

To all whom it may concern:

Be it known that I, ALPHEUS LOWMILLER, of Jewett, in the county of Harrison and State of Ohio, have invented certain new and useful Improvements in Automatic Weighing and Registering Machines; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

This invention relates to that class of automatic weighing-machines employed in weighing grain or other substances which are received from spouts in continuous streams.

It consists in the peculiar manner of supporting the tilting hopper in a pending adjustable frame on the end of the weighing-beam, as will be hereinafter fully explained, and pointed out in the claims.

In the drawings, Figure 1 is a side elevation, and Fig. 2 an end elevation, of a device constructed according to my invention.

A is the frame on which is supported the mechanism of my invention. It consists of the sill *a*, front post, *a'*, rear post, *a''*, and legs or feet *a'''* and *a''''*, all constructed and arranged to support the several parts of the invention in proper position relative to each other, as hereinafter explained. On the top of the post *a'* I place a cross-bar, *a''*, on the outer ends of which are fixed the vertical arms *a'''*, which support the weighing-beam.

b is the weighing-beam, composed of a head or cross-bar, *b'*, the forward-projecting arms *b''* *b'''*, and the rear arm or scale, *b''''*, on which the balancing-weight *b'''''* is placed. The cross-head bar *b'* is properly supported on knife-edge pins resting in bearings in the standards or arms *a'''*. On the upper side of the arm *b''*, I place a boxing or casing, which extends from the head *b'* to the outer end of the said arm, and it is affixed so as to leave space sufficient between it and the arm to permit the free movement of the weight *b''''* in adjusting it to increase or decrease the draft of the scales.

In the casing *c*, I place a round ball, *c'*, made of metal or other suitable material, which will roll from one end to the other when the scales are tilted in the operation of weighing.

d is a ring or frame placed between and balanced on pins having bearings in the ends of the arms *b''*, as shown.

e is a hanging frame suspended to the ring *d* by hangers *e'* *e''*, so that it may have a lateral swinging movement. On the swinging frame *e* the tilting hopper *f* is supported by suitable pins *f'*, attached at or near its bottom. The hopper is divided centrally by a partition, *f''*, into two compartments, *f'''* *f''''*, the ends of which extend outward over the chutes *g* *g'*, affixed on a suitable supporting-bar, *g''*, attached to the frame A. On the frame *e*, just below the hoppers, I affix a cross-bar, *h*, the ends of which project outward under the ends of *f'''* *f''''*. In the ends of the bar *h*, I place set-screws *h'* *h''*, which may be raised or lowered, and thus limit the throw or tilt of the hopper.

On the end of the sill *a* under the hopper I affix a cross-bar, *i*, in the ends of which I affix the adjustable slotted standards *k* *k'*, which may be raised or lowered at pleasure by means of the set-screws *k''*. The arms *k* *k'* are arranged so that the lower end of the frame *e* is suspended between them, and they serve as guides to keep the said frame in a vertical position by preventing it from swinging too far to one side or the other. The upper ends of these arms *k* *k'* are so arranged that they engage, tilt, and discharge the contents of the full compartment of the hopper, and bring the other hopper into position to receive the inflowing grain or other material.

In the operation of the device the grain or other material is brought through suitable spouting, and delivered into the hopper through the ring or frame *d*. If the hopper be in the position shown in Fig. 2, it will be seen that the grain will all fall into compartment *f'''*. When grain sufficient has been delivered into the hopper to balance the weight *b''''* the beam *b''* rises, and the moment its rear or outer end gets above a level with the pivots *b'''* the ball *c'* will run rapidly to the forward end of the

casing *c*, and cause the hopper with its grain to drop instantly onto the tops of the standards *k k'*, so as to bring the bottom of said hopper into a horizontal position. A portion of the grain will instantly be discharged into chute *g*. The equality between the grain and the weight *b⁴* being thus altered the beam will fall, and as the frame *e* rises the end *f³* of the hopper will drop into the chute *g* in a corresponding position to that shown for the end *f⁴*, Fig. 2. The ball *c'* will roll to the other end of the casing, causing the beam to fall with a quick movement, so that the frame *e*, with its attached mechanism, rises and falls with a jerking movement. The ends of the hopper *f* tilt alternately with each alternate rise and fall of the beam.

On the side of the frame I affix a registry-wheel, *m*, which is held by a spring, *n*, and is operated by a pawl, *o*, affixed on the beam *b³*. By this wheel the quantity of grain or other material weighed will be accurately and automatically registered.

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

1. The combination, with the beam *b*, constructed with a cross-head, *b'*, and arms *b²*, ex-

tended forward of its pivotal center or center of motion, and the hopper *f*, of the open frame *d*, balanced on pivots affixed to its lateral bars and supported in bearings in the ends of the arms *b²*, and the rack *e*, hung on pins *e'*, affixed to the front and rear bars of the open frame *d*, the said frame *d* and the rack *e* being so supported and balanced that they will have an adjustable swinging movement at right angles to each other, substantially as shown, and for the purpose set forth.

2. The combination, with the hopper *f*, supported on pins *f'*, and the swinging frame *e*, of the bar *h* and set-screws *h'*, substantially as and for the purpose set forth.

3. The combination, with the frame *A*, having bar *i*, and with the hopper *f*, supported on the swinging frame *e*, as described, of the adjustable standards *k k'*, arranged substantially as and for the purpose set forth.

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

ALPHEUS LOWMILLER.

Witnesses:

URIAH SIMMONS,
JAMES ADAMS.