

(No Model.)

H. E. SMYSER.

WEIGHING AND SUPPLYING APPARATUS.

No. 297,027.

Patented Apr. 15, 1884.

Fig. 2.

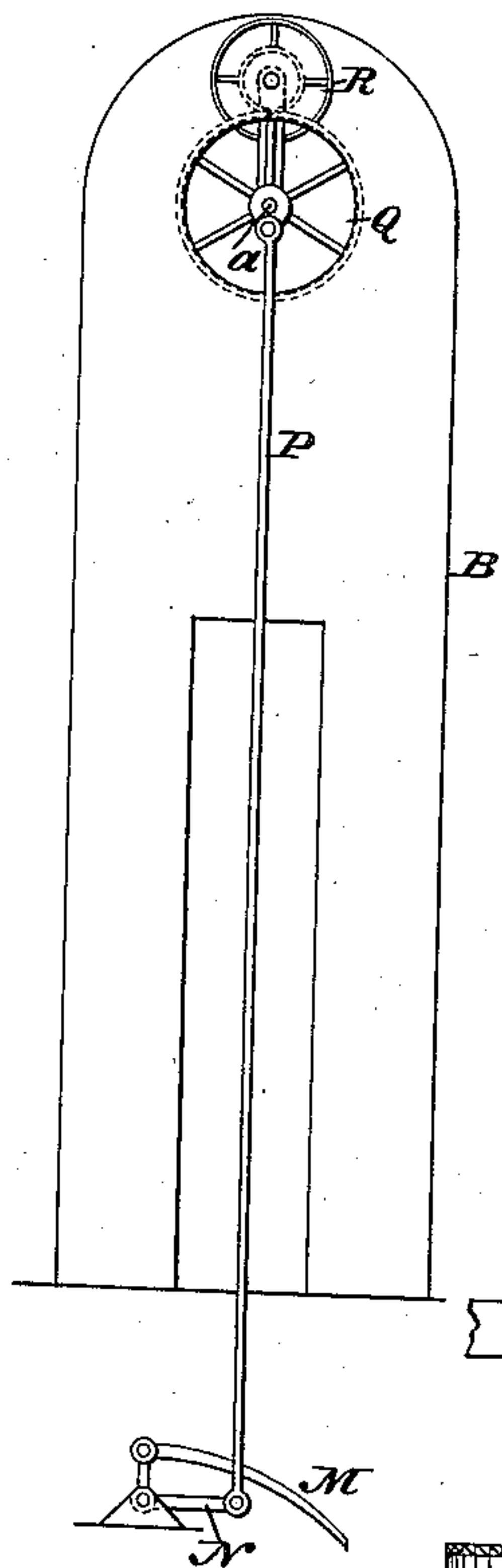


Fig. 1.

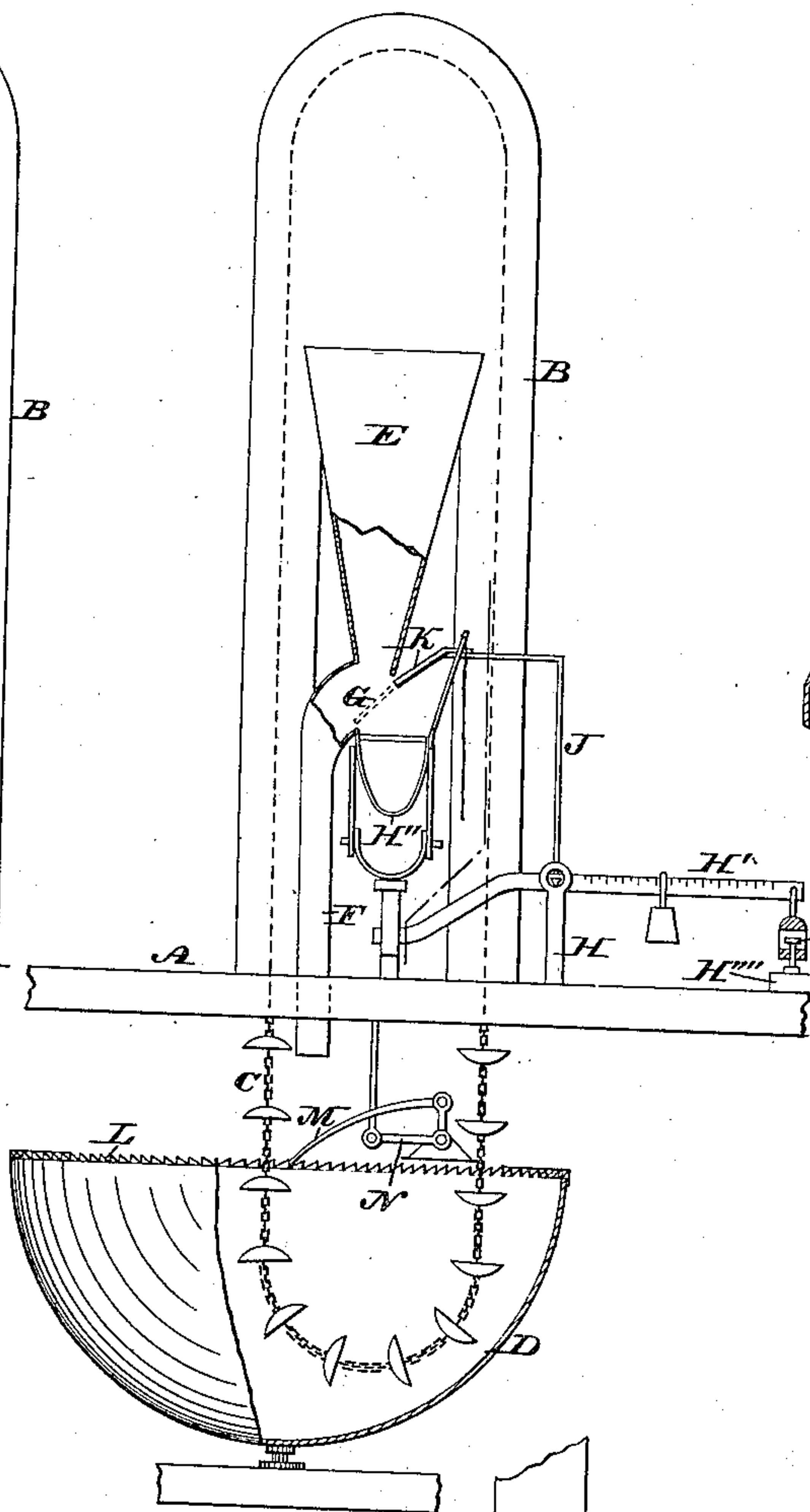


Fig. 3.

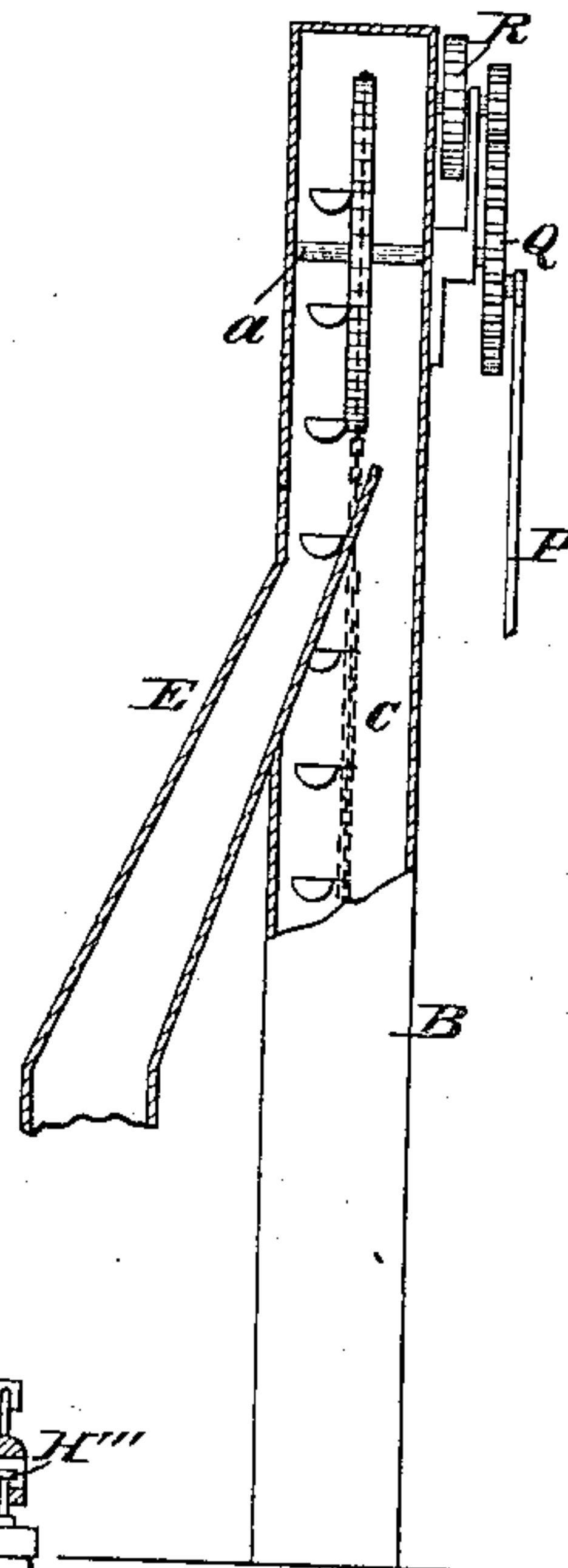
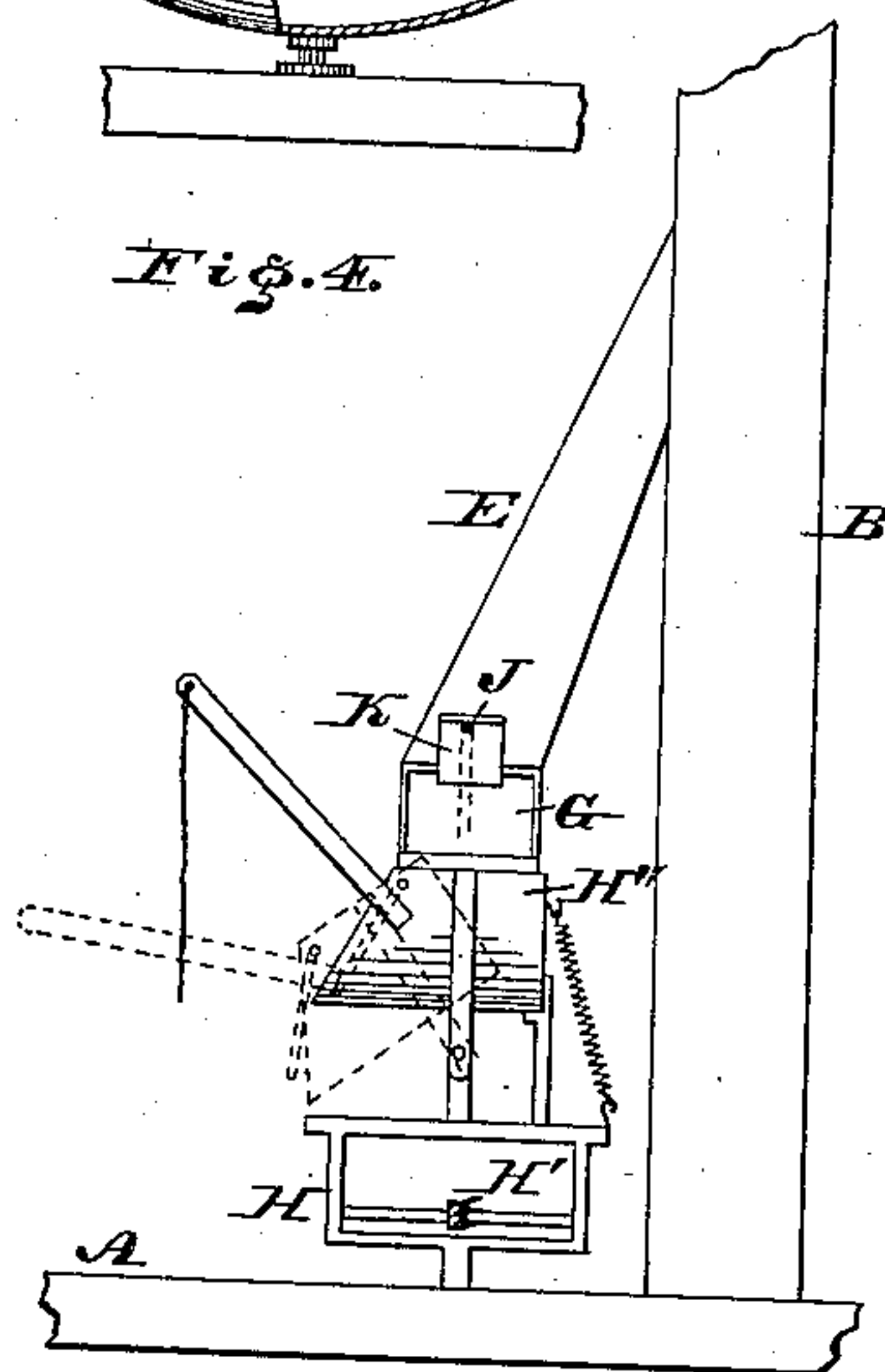


Fig. 4.



WITNESSES:

A. P. Grant,
H. F. Kircher

INVENTOR:

Henry C. Smyser,
BY John A. Diersheim
ATTORNEY.

UNITED STATES PATENT OFFICE.

HENRY E. SMYSER, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO THE
WEIKEL & SMITH SPICE COMPANY, OF PENNSYLVANIA.

WEIGHING AND SUPPLYING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 297,027, dated April 15, 1884.

Application filed December 7, 1883. (No model.)

To all whom it may concern:

Be it known that I, HENRY E. SMYSER, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Weighing and Supplying Apparatus, which improvement is fully set forth in the following specification and accompanying drawings, in which—

Figure 1 is a front view, partly broken away and sectional, of an automatic weighing and supplying apparatus embodying my invention. Fig. 2 is a rear view of a portion thereof. Figs. 3 and 4 are side elevations of detached parts.

Similar letters of reference indicate corresponding parts in the several figures.

My invention consists of means for automatically supplying the tray of a scale with material to be weighed.

It also consists of means for automatically weighing material supplied to a scale.

It also consists of certain other details of construction, as will be hereinafter fully set forth.

Referring to the drawings, A represents a table or support for parts of the apparatus embodying my invention.

B represents a closed casing which rises from the table A, and has within it a conveyer, C, formed of an endless chain, with buckets or cups connected thereto, the same being supported on an operating-shaft, *a*, and is passed through openings in the table and dips into a supply pan or box, D, located beneath the table, said shaft *a* being mounted on the upper part of the casing B, and said box properly inclosed.

E represents a hopper, which is secured to the casing B, and its upper end is within said casing, between the lengths of chain of the conveyer C.

To the base of the hopper E is attached a chute, F, which passes through the table A and has its lower end over the supply-pan D.

At the top of the chute F, at one side thereof, is a throat, G, it being noticed that said top is deflected laterally from the base of the hopper, so that the bottom opening of the hopper E and said throat G form somewhat of a continuous passage, causing material drop-

ping from said opening to enter said throat, and thus escape. Said throat may, however, be at the side of the base of the hopper E.

H represents a scale, which is properly mounted on the table A, the beam H' being of any suitable construction.

H'' represents the tray of the scale, the same being pivoted to standards or supports rising from one end of the scale-beam, so that it may be tilted or swung downwardly in order to be discharged of its contents, as most clearly shown in Fig. 4.

Rising from and secured to the scale-beam is an arm, J, the upper end of which extends toward the throat G, and is provided with a cut-off plate or valve, K, which is adapted to be projected across said throat and close the same, as shown in Fig. 1, it being noticed that the tray of the scale is located beneath said throat and cut-off plate. The pan D is properly supplied with material and power applied to the shaft *a*, whereby the conveyer is operated and the material raised to the top of the casing B, overturned, and caused to drop into the hopper E. The scale having been previously adjusted to weigh the required amount, has its tray elevated and the cut-off plate K removed from the throat G. The material having now passed through the hopper, reaches the throat and escapes therethrough in a gentle stream to the tray of the scale. As the tray slowly descends, the plate K is gradually advanced across the throat by the movement of the scale-beam, and when the precise quantity of material is weighed the plate K completely closes the throat, having accomplished the same without abruptness. The material in the hopper now falls on the plate K, and is thereby deflected into the chute F, so as to return to the pan D, from whence it is again conveyed to the hopper. The tray is now cleared of its contents and quickly returned, and, being empty, is raised by the scale-beam, the plate K also moving to a position uncovering the throat G, whereby the material is again directed into the tray and automatically weighed, after which the stream is cut off and returned to the supply-pan, as previously stated.

As stated above, the action of the plate K

closing the throat G is without abruptness. This is more particularly accomplished by making the counter weight or balance of parts fitting each other telescopically, so that when the tray is empty and raised the lower part, H''', of the counter-balance rests on a platform or shelf, H''', without exerting its weight on the beam. One part of the counter weight or balance is made hollow and has an internal shoulder, and the other part is formed with a stem having a T-head, which latter comes in contact with the shoulder when the upper part is partly raised by the beam, and is thereby also raised. When the tray receives almost all of its load, then the lower part of the counter-balance is raised, thus serving to check the closing motion of the plate and permit a small stream of material to pass through the throat, occasioning also gentle vibrations of the scale beam until the proper amount of material is in the tray.

In order properly to feed the buckets or cups of the conveyer and prevent packing of the material in the supply-pan, the latter is made rotatable, and formed, preferably, with a curved bottom, the rotation being effected by means of a ratchet or toothed rim, L, which is secured to the pan and engaged by a pawl or dog, M, which is hung to an elbow-lever, N, to which power is imparted by a rod, P, attached to a crank-wheel, Q, or other proper movable member of the apparatus, said wheel being geared with the driving-pulley R, and keyed or otherwise secured to the shaft a.

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

1. A hopper provided with a chute which is permanently uncovered, and an additional discharge throat or outlet, in combination with weighing devices which automatically cut off the supply of grain through said discharge throat or outlet whenever a certain quantity has been weighed, substantially as set forth.

2. A hopper provided with a permanently-open chute and an additional discharge throat or outlet, in combination with a plate, K, adapted to slide across said throat and clear it, a scale-pan arranged to receive the grain from said throat, and a scale-beam and connecting-rods through which the descent of said

pan gradually moves said plate across said throat or outlet and closes the same, substantially as set forth.

3. A supply-pan and an endless conveyer for raising the material therefrom, in combination with a hopper which is fed by said conveyer and discharges into said pan, and automatic weighing devices, which are supplied through an independent outlet or discharge-throat of said hopper and operate to close the same when a certain quantity has been weighed, without closing the outlet whereby said hopper discharges into said supply-pan.

4. A supply-pan and an endless conveyer operating therein, in combination with means for imparting rotary motion to said pan, substantially as and for the purpose set forth.

5. A hopper provided with a chute which is permanently uncovered, and an additional discharge throat or outlet, in combination with weighing devices which automatically cut off the supply of grain through said discharge throat or outlet whenever a certain quantity has been weighed, and a counterbalance-weight controlling said devices and consisting of two sliding parts, operating substantially as set forth.

6. A hopper provided with a permanently-open chute and an additional discharge throat or outlet, in combination with a plate adapted to slide across said throat and close it, a scale-pan arranged to receive the grain from said throat, a scale-beam and connecting-rods through which the descent of said pan gradually moves said plate across said throat or outlet and closes the same, and a counterbalance-weight controlling said devices consisting of two sliding parts, substantially as and for the purpose set forth.

7. The combination, with an automatic weighing and supplying device, of a counterbalance-weight consisting of an upper constant part, H''', and a lower part, H''', one part being hollow and internally shouldered, and the other part having a connecting-stem formed with a T-head, substantially as and for the purpose set forth.

H. E. SMYSER.

Witnesses:

JOHN A. WIEDERSHEIM,
A. P. GRANT.