

(No Model.)

B. McDONALD.

GRAIN TALLY.

No. 393,777.

Patented Dec. 4, 1888.

Fig 1

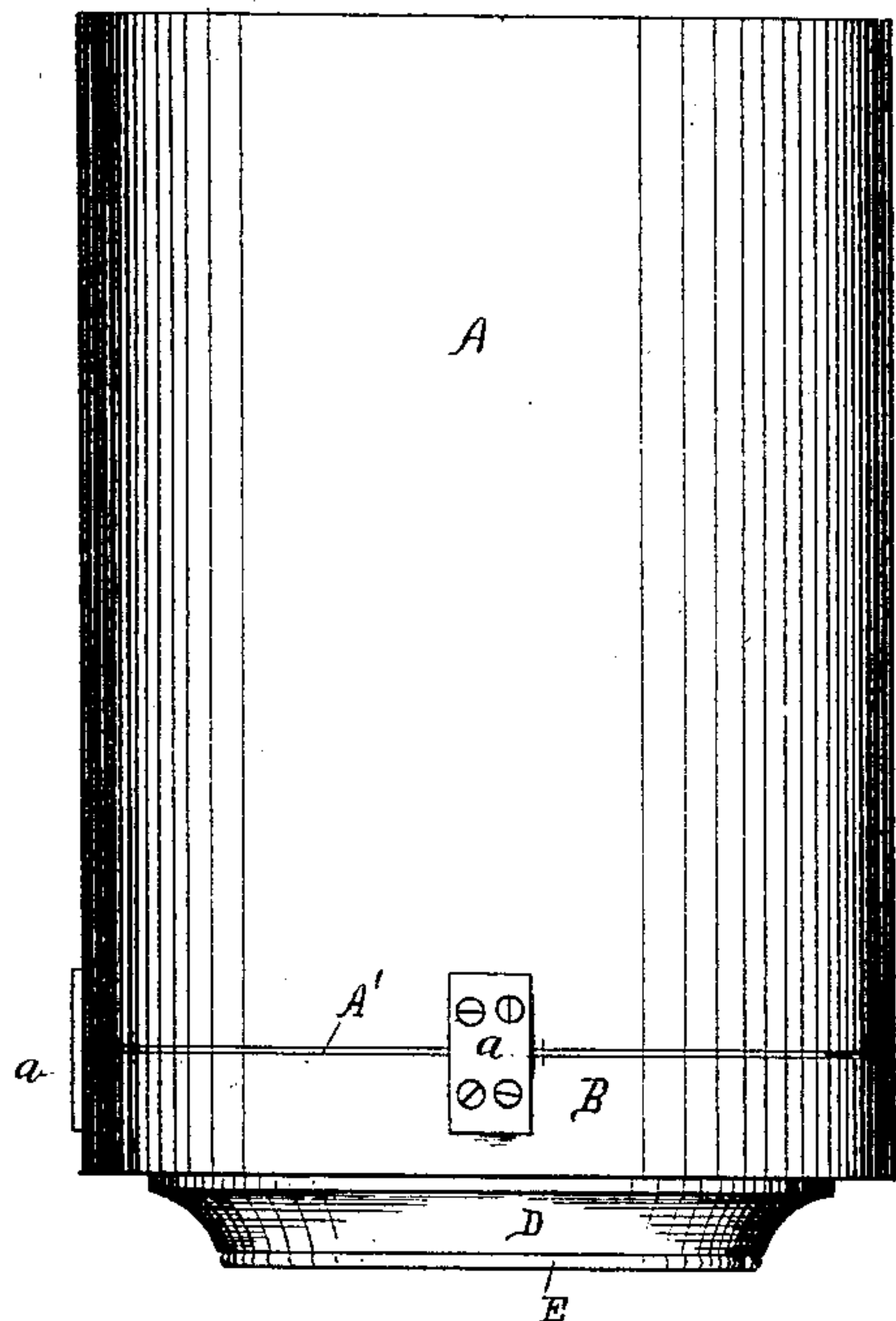


Fig 2

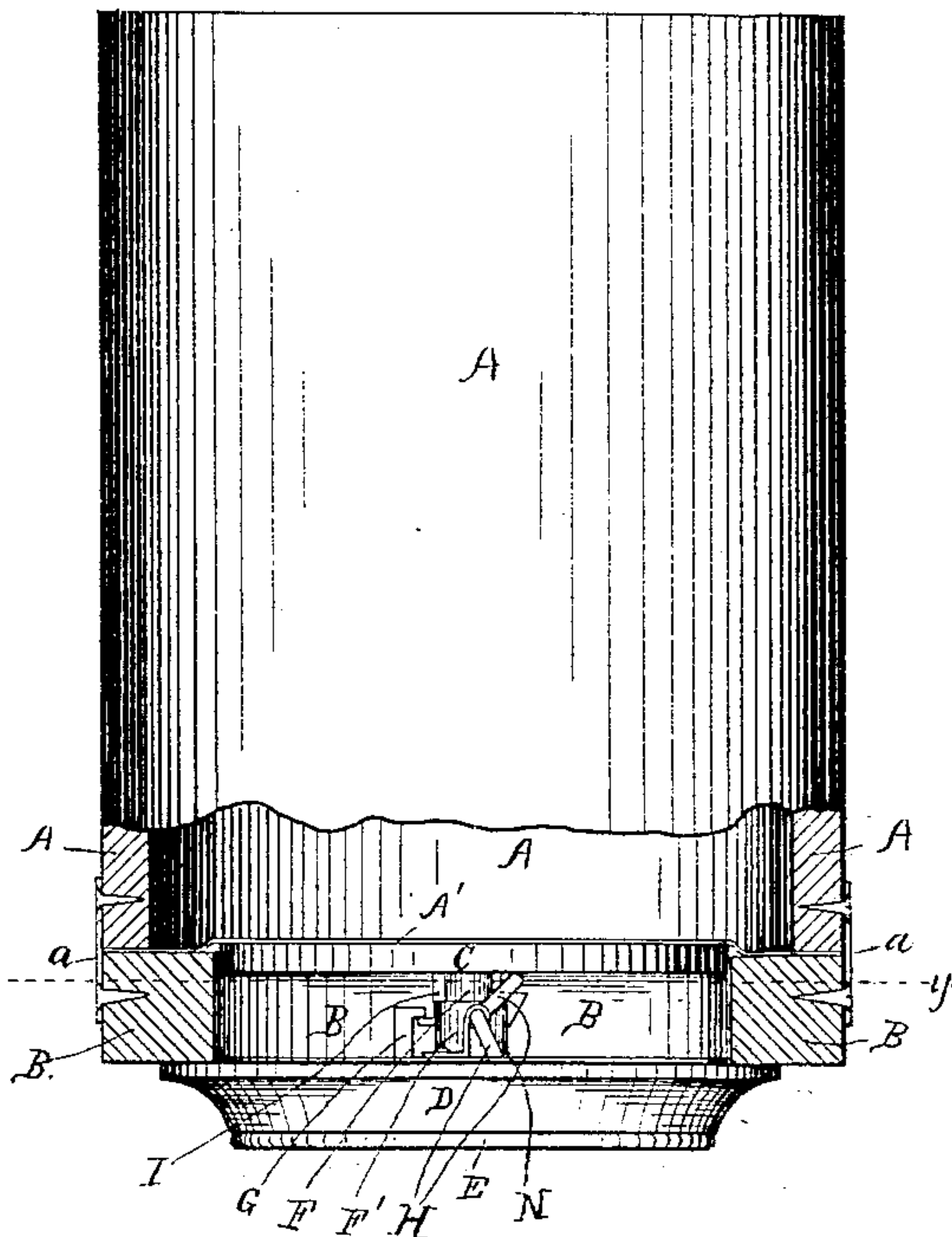


Fig 3.

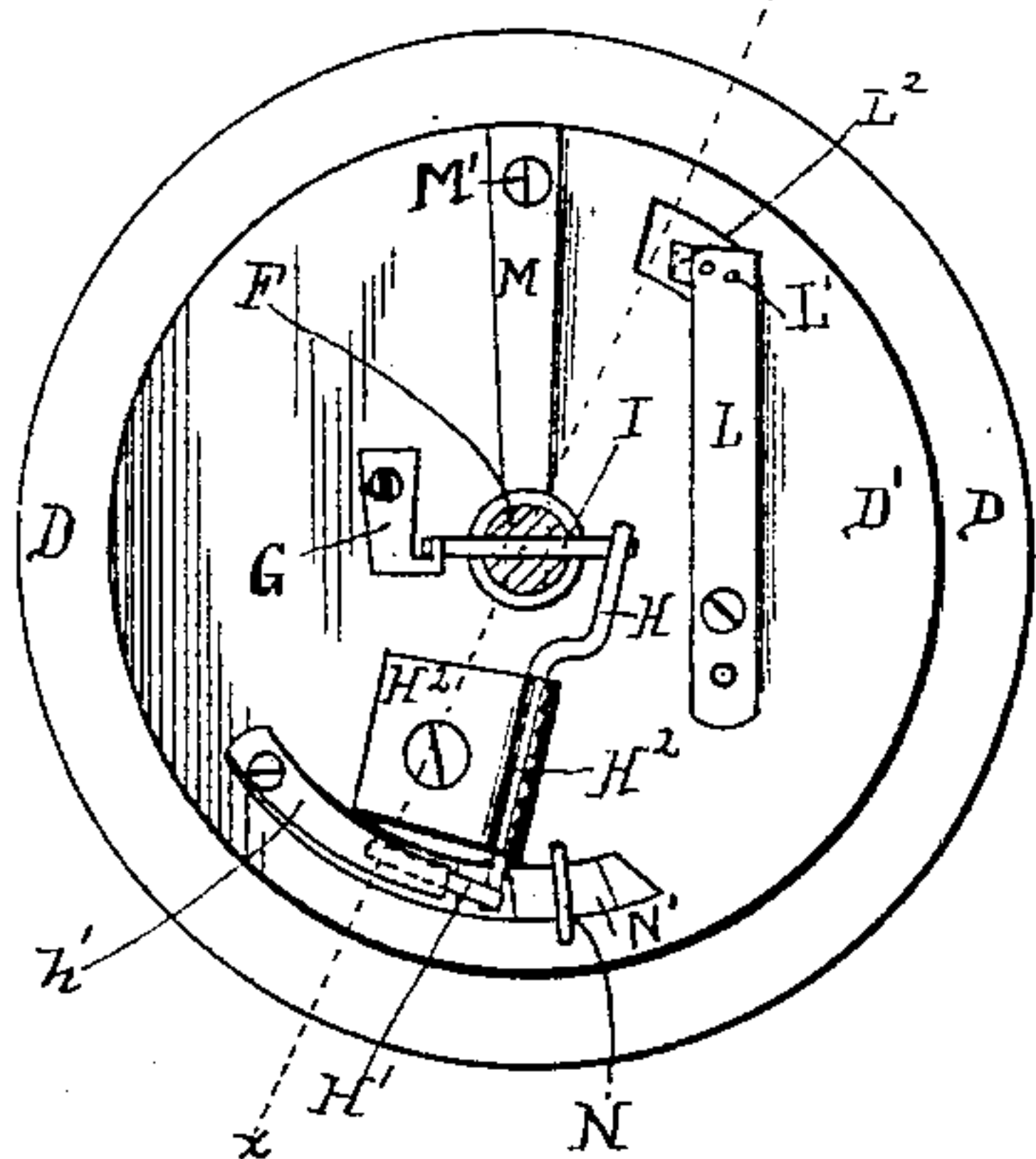


Fig 4.

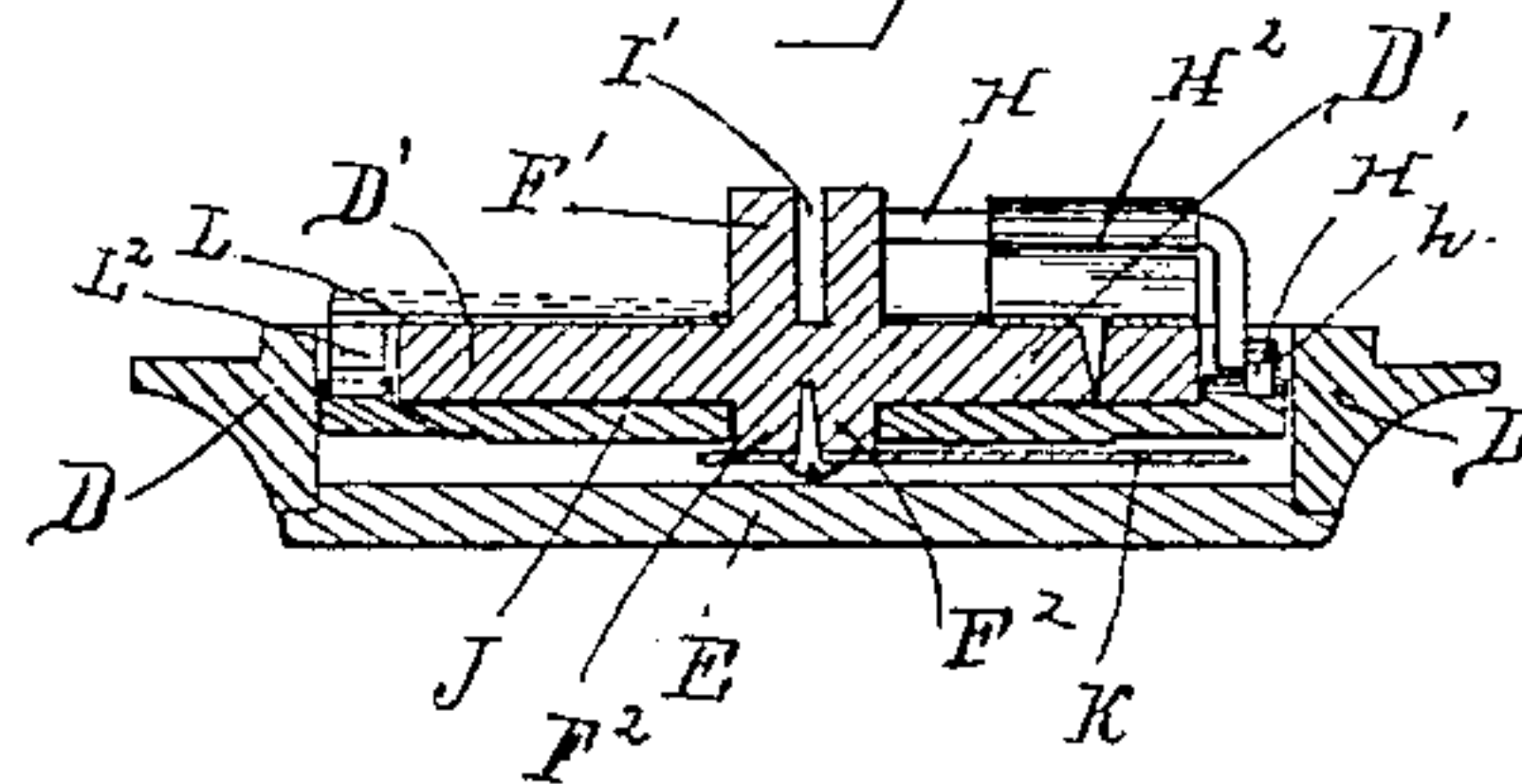


Fig 5

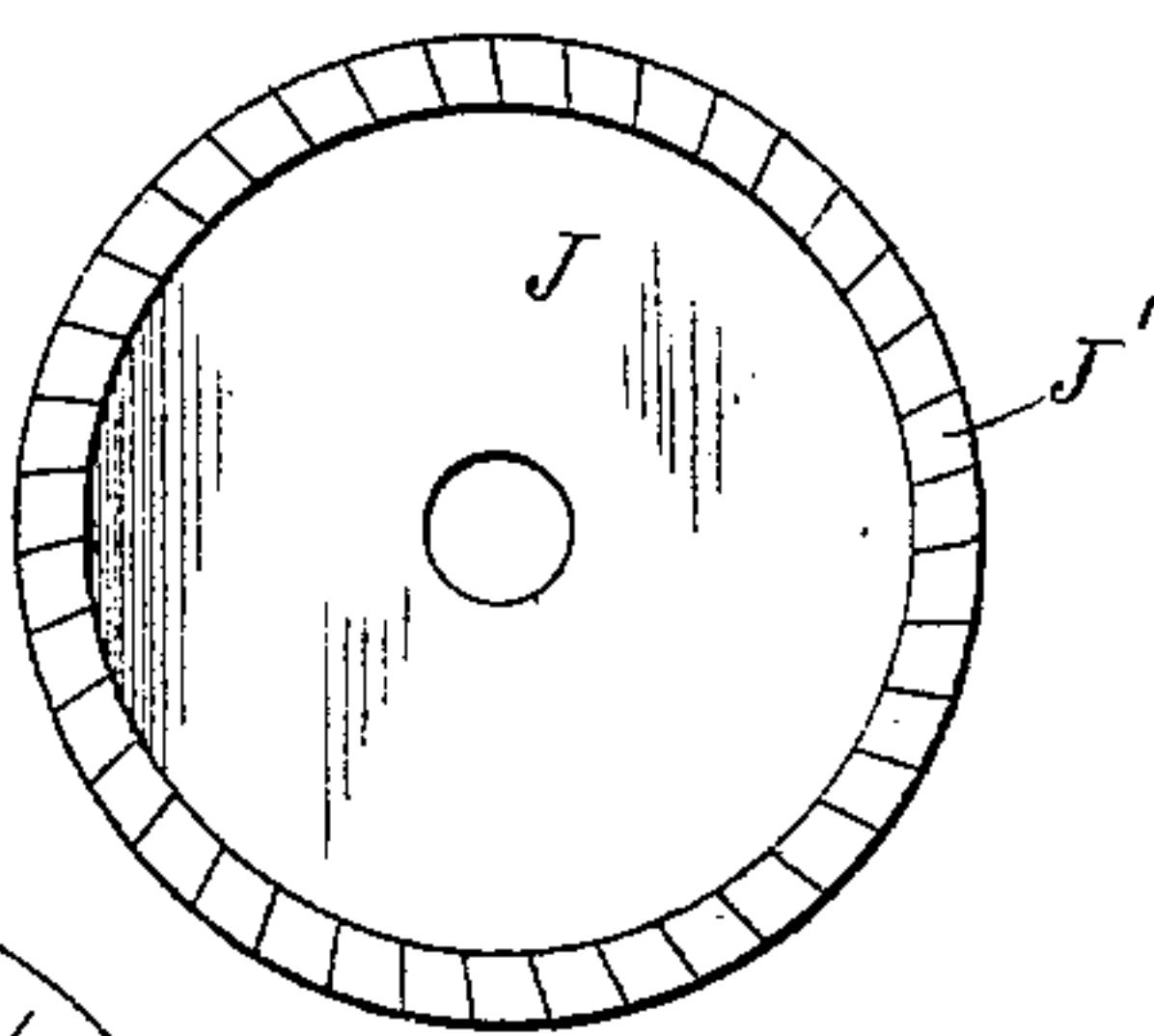


Fig 7.

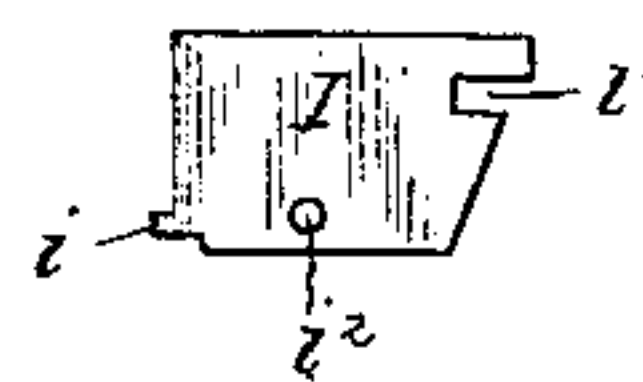


Fig 6.

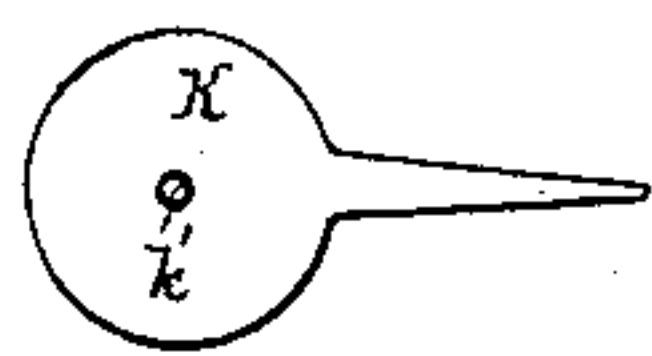


Fig 9.

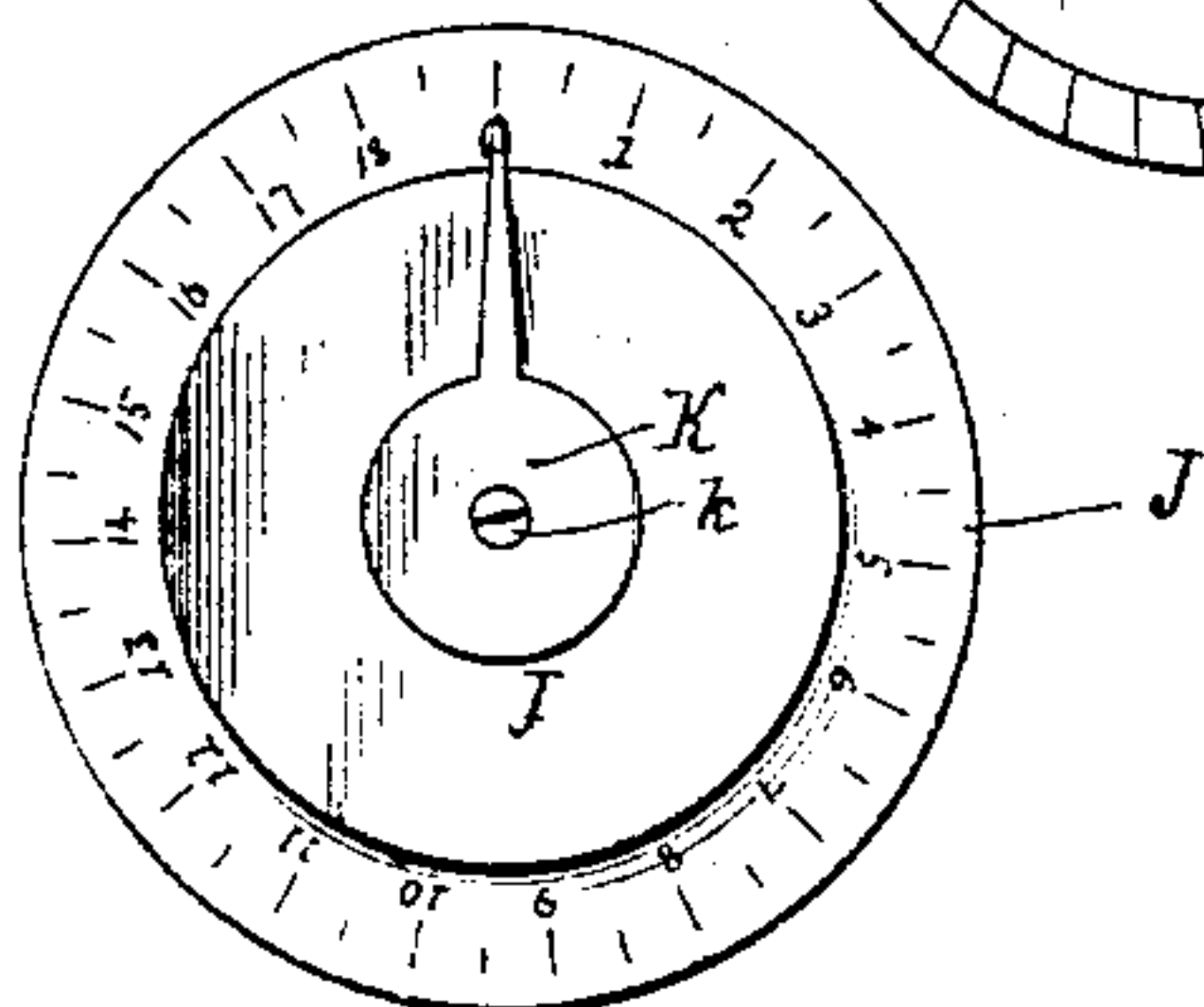


Fig 8.



Witnesses.
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UNITED STATES PATENT OFFICE.

BRANSON McDONALD, OF MACKSVILLE, WEST VIRGINIA.

GRAIN-TALLY.

SPECIFICATION forming part of Letters Patent No. 393,777, dated December 4, 1888.

Application filed July 12, 1888. Serial No. 279,702. (No model.)

To all whom it may concern:

Be it known that I, BRANSON McDONALD, a citizen of the United States, residing at Macksville, in the county of Pendleton and State of West Virginia, have invented certain new and useful Improvements in Grain-Tallies; and I do declare the following to be a full, clear, and exact description of the invention, such as 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 the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to grain-tallies; and its objects are, first, to measure the grain automatically by the pressure of its own gravity; second, to transmit the actuating-pressure directly to a graduated plate revolving before a stationary pointer; third, to cause the infallible and simple notation of the aggregate quantity measured in a prescribed period, and, fourth, to attain these ends with structural simplicity and economy. I attain these purposes by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 represents a side elevation of a grain-measure operatively embodying the essential elements of my invention. Fig. 2 is a similar view thereof partly broken and in section to show its interior construction. Fig. 3 is a sectional view of the counter, taken on the line *y y* of Fig. 2. Fig. 4 is a transverse section of the counter, taken on the line *x x* of Fig. 3. Fig. 5 is a rear view of the revolving graduated plate. Fig. 6 is a detail view of the stationary indicator in front of which the revolving plate rotates. Fig. 7 is a detail view of the slotted guide-plate which serves to direct the oscillating movement of the pressure-transmitting lever. Fig. 8 is a detail view of the pressure-transmitting lever; and Fig. 9 represents the front view of the revolving plate shown in Fig. 5, whose graduations, rotating with said plate, are indicated by the stationary pointer axially mounted concentrically therewith.

The same designations indicate corresponding parts in the several views.

In the transshipment and retailing of grain and cereals it is important to fill packages of a uniform size with an invariable quantity

without material loss of time and avoiding circuitry of manipulation. The quantity to be measured is uniformly fixed, so that indicating media for different quantities vary from each other in size only, in all other respects being species of the same genus and illustrations of the same principle.

In the drawings, A represents a receptacle whose altitude and diameter vary with the size of the package to be filled or the quantity to be weighed. It is mounted upon a washer-ring, A', which serves also as a separating-diaphragm secured rigidly to the frame B of the weighing mechanism, which is provided for the purpose of accommodating pressure-imparting plate C of the weighing and indicating mechanism, with an annular central recess concentric with the axis of the stationary pointer K. Plates *a* serve to join the parts A and B together, preferably by screws, so that different-sized measures may successively be superposed over the same indicating mechanism.

D represents the frame of the weighing mechanism, which consists of a base, D', whose upper surface accommodates the spring M, the retractile force of which restores the plate C to its normal position after each depression due to a weighing operation. One end of the spring M is attached, by a screw, M', to the base D', the other end being free under the movable axis F of the plate C, tending to restore the same after depression. An arm, H², held by a pin or screw, has a bent terminus that serves as a bearing for the bent pressure-transmitting lever II, to whose lower end is pivotally held the dog II', that pushes forward the plate J by reason of the serrations J'. A suitable detent, L², attached by pins L' to the spring I, secured on the upper face of the base D', maintains the plate J in proper position after each successive arc-like movement.

E represents a cover over the face of the indicator, which obviates undue wear or atmospheric exposure.

F represents the movable reciprocating axis of the plate C, which responds to the pressure of gravity of the substance when a predetermined quantity has accumulated in the receptacle A. This axis is slotted to admit a plate, I, held rigidly therein by pin *i*² and

moving synchronously therewith, whose slot i' serves to guide the lateral oscillation of the upper end of the transmitting-lever H, to whose lower end the dog H' is pivotally secured by pin h and guided by spring h' . The plate I also has a projecting lug, i , by which the vertical reciprocation of the plate is guided by an arm, G, whose lower bent surface is rigidly secured to the face D'.

10 The axis F moves telescopically in the bearing F', whose lower surface, F², serves as a point of attachment for the stationary pointer K after the insertion of the rotating plate J, which, by reason of an enlarged base, serves to hold both said plate and the pointer by the same screw, k . The bearing F' is bifurcated at I' to permit and guide the reciprocations of the plate I. A segmental slot, N', cut in the face D', permits, respectively, the oscillation of the lever H and its attached dog H' and the passage of the spring h' , which serves to guide the movement of said dog and hold it to its work in the serrations J'. The slot is spanned by a limiting-pin, N, whose ends are embedded in the face D' on either side of the slot and serve to prescribe the movement of the lever H.

It will be understood that as often as the predetermined quantity of grain—say a bushel—has accumulated in the receptacle A its

pressure, due to gravity, will depress the plate C against the force of the spring M. This pressure is mediatly transmitted to the counter J, and is indicated by pointer K in the manner already set forth.

Having thus fully described my improvement, what I claim is—

In grain-tallies, the receptacle A, in combination with the movable base-plate C, the pressure whereon is transmitted to the oscillating axis F, slotted to admit a plate, I, held therein by pin i' , whose slot i' serves to guide the lateral oscillation of the upper end of the transmitting-lever H, to whose lower end the dog H' is pivotally secured by pin h and guided by spring h' , the transmitting-lever H, the actuating-dog H', and the counter consisting of the stationary pointer K and the movable plate J, dentated peripherally on its upper surface to be engaged by the dog H' and graduated on its lower face to show the number of bushels registered, as shown and described.

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

BRANSON McDONALD.

Witnesses:

FLOYD McDONALD,
JOHN W. GRAHAM.