

(No Model.)

J. H. FORSYTH.
AUTOMATIC GRAIN SCALES.

No. 405,728.

Patented June 25, 1889.

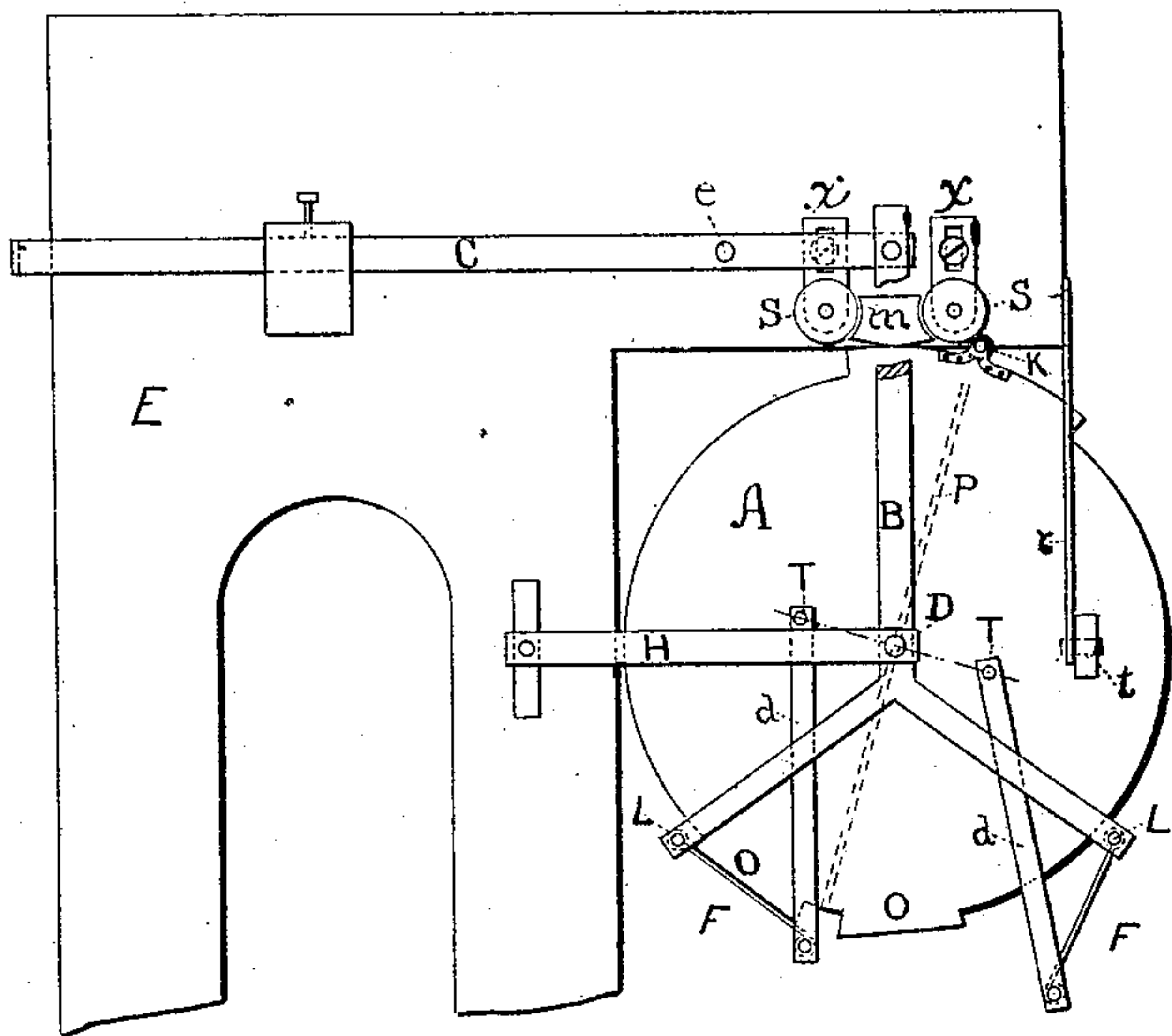


Fig. 1.

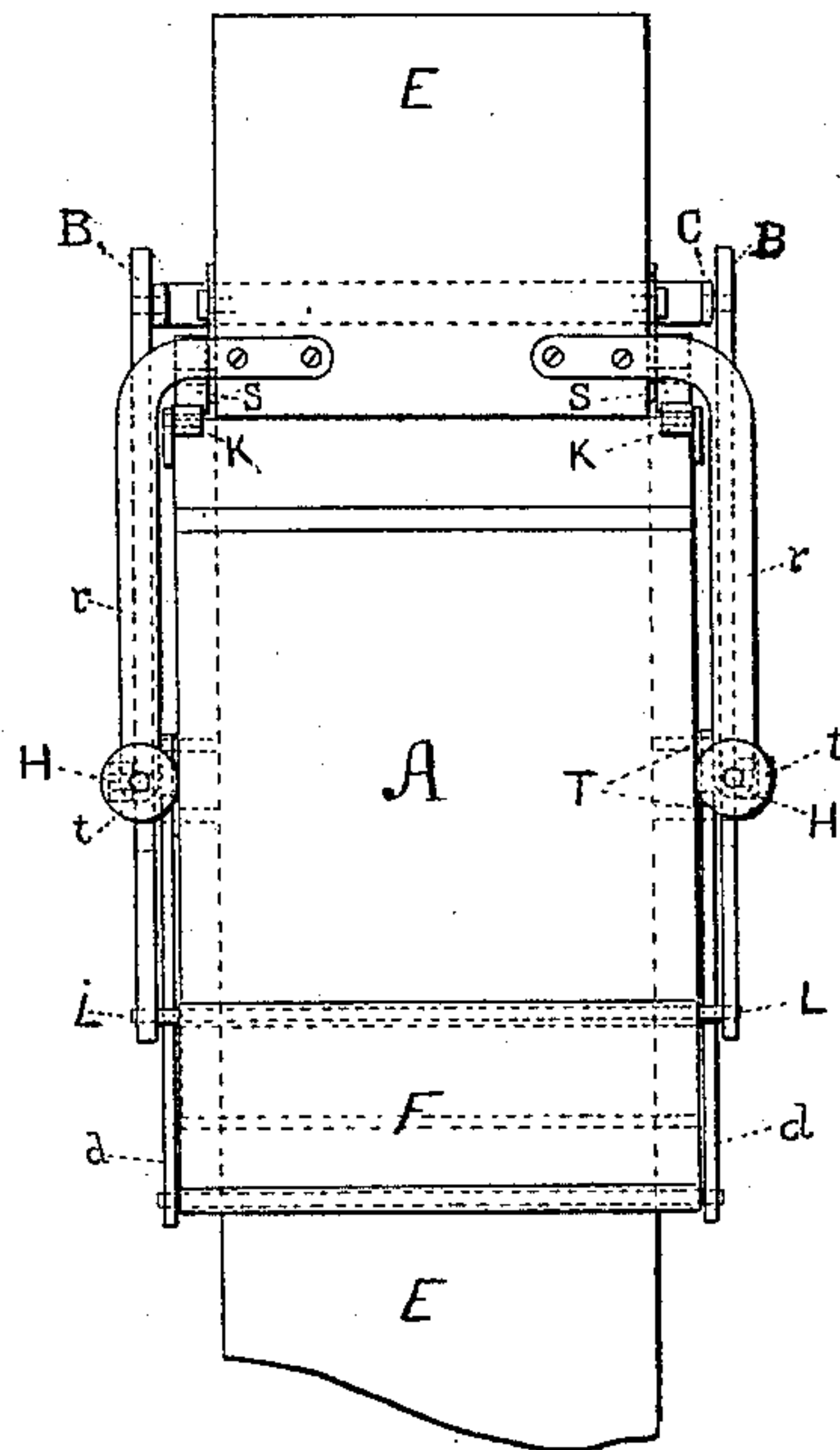


Fig. 2.

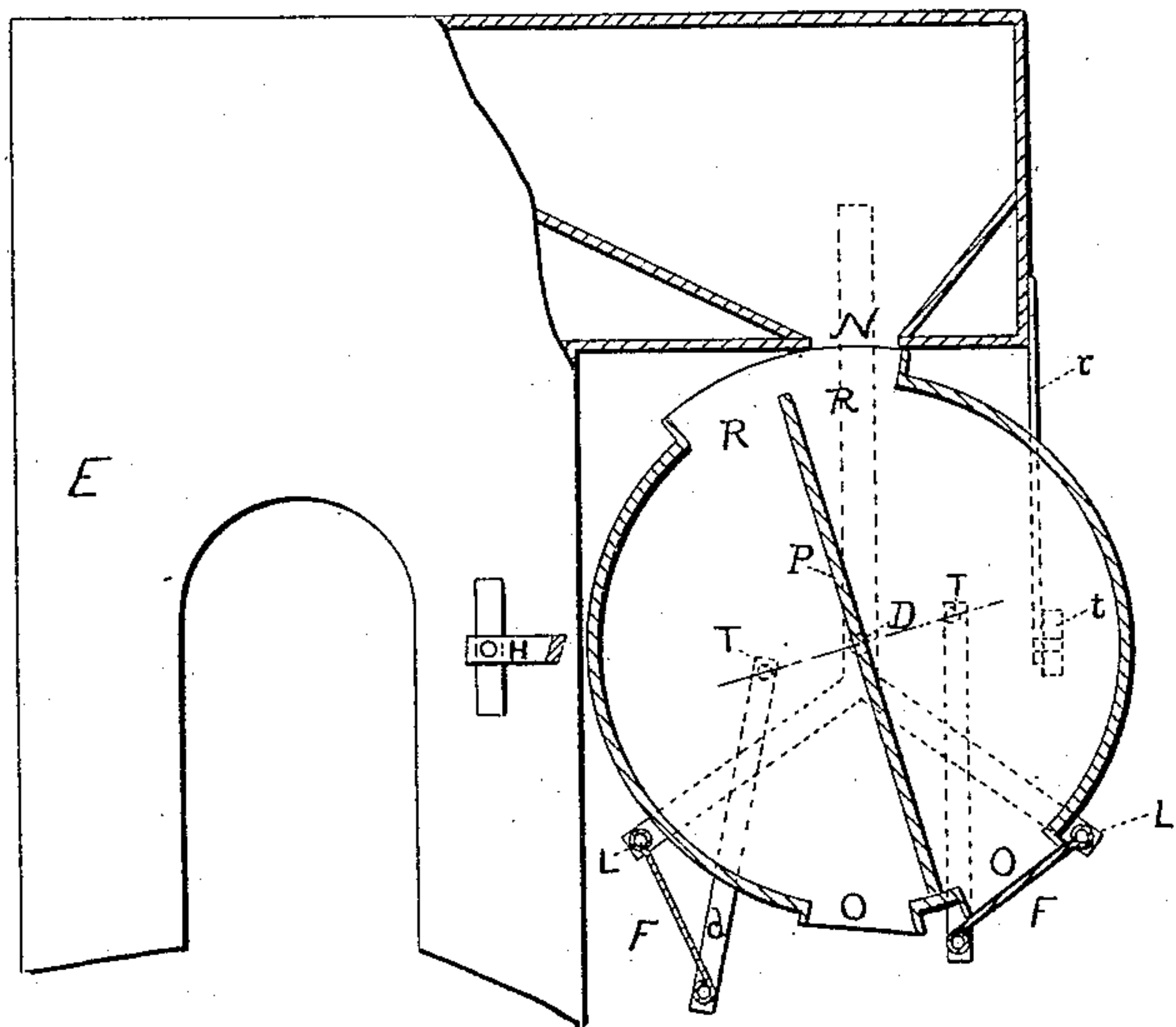


Fig. 3.

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JOHN H. FORSYTH, OF FARGO, DAKOTA TERRITORY.

AUTOMATIC GRAIN-SCALE.

SPECIFICATION forming part of Letters Patent No. 405,728, dated June 25, 1889.

Application filed April 22, 1889. Serial No. 308,163. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. FORSYTH, a citizen of the United States, residing at Fargo, in the county of Cass and Territory of Dakota, have invented certain new and useful Improvements in Automatic Grain-Scales, of which the following is a specification.

The invention relates to that class of scales in which the grain passes through an oscillating weighing-receptacle provided with two oppositely-arranged compartments which alternately receive and discharge the grain, the operation being actuated by the weight of the grain; and the objects of these improvements are, first, to provide a detent device so arranged as to insure positive operation with the most delicate adjustment; second, to provide hinged discharge-port covers so suspended as to practically avoid all friction in operation, and, third, to arrange the scale suitably for attaching to the elevator of a thrashing-machine, whereby the grain as delivered from the machine may be automatically weighed and discharged into bags or wagon-boxes; and I attain these objects by means of the devices hereinafter described in connection with the accompanying drawings, in which similar letters refer to similar parts.

Figure 1 in the drawings is a front view of the scale as attached to the head of an elevator E, which answers the purpose of a frame. Fig. 2 is a side view of same, and Fig. 3 a vertical section of the weighing-box and elevator-head.

The forked hanger-arms B B, connected at their fork ends by the rods L L and having the weighing-box A, pivoted therein at D, are suspended from the fork-arms of a scale-beam C, which straddles the head of the elevator and is fulcrumed thereon on either side at e e, the scale being provided with two weights, one on each fork. The weighing-box A is divided into two compartments by the partition P, the center of the box being in vertical line with the center of the discharge-spout N of the elevator. Each compartment is provided with a receiving-port R at the top and a discharge-port O at the bottom, and below the box are two swinging plates

or discharge-port covers F F, the outer edges of said covers being hinged or loosely suspended from the lower extremities of the hanger-arms, or the rods connecting the same, and the inner edges connected by the suspending-links d d to the weighing-box, the said links being hinged to the ends of the plates or covers and pivoted to the heads of the weighing-box and arranged and adjusted to operate the swinging covers simultaneously with the oscillating of the box, so that when either compartment is in position to receive the grain the port-cover of that compartment is held snugly against the port until the load is ready to discharge, when it drops concurrently with the oscillating movement of the box, the advantage of this style of swinging port-cover being that it can be adjusted to hug the port closely when closed without offering any resistance to the oscillating or opening movement.

Above the weighing-box on the elevator are provided two separate detent-wheels S S, pivoted to adjustable brackets X X, the said wheels being located one on each side of the central vertical line of the weighing-box, and at the top of the weighing-box is pivoted a wheel K, arranged to meet and engage alternately, when the box is up, the peripheries of the wheels S S, by means of which engagement the box is held in its proper tilted position while being filled, a bridge or projection M being provided between the wheels S S to prevent the wheel K from being accidentally caught between them.

Guide-bars H H are pivotally connected with the elevator and the hanger-arms to maintain the arms in their proper position and insure uniformity of impingement between the wheel K and the wheels S S, and guard-rollers t t are pivoted to brackets r r, attached to the elevator, said rollers being so located and adjusted that their rotating direction will coincide with both the vertical and the oscillating movement of the box, these guide-bars and guard-rollers being especially necessary to insure uniformity of action under the violent shaking and jar which the scale is subjected to from the vibrations of the thrasher.

In operation, the box A being tilted to bring either port opposite the discharge-spout of the elevator, it is held in that position by the wheel K impinging the wheel S, as shown in Fig. 1, until sufficient grain has run in to overbalance the scale-beam, when the box descends until the wheel K can pass under the wheel S, and the preponderance of weight in that compartment causes the box to oscillate, opening the discharge-port of that compartment and transferring the flow from the elevator into the opposite compartment. The outflow quickly relieving the overbalance of the scale-beam, the box again ascends and the wheel K engages with the opposite wheel S, and so the operation may be repeated.

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

1. In an automatic grain-scale, an oscillating weighing-box pivotally supported between hanger-arms suspended from the arm of a scale-beam and provided with oppositely-arranged compartments intended to alternately receive and discharge the grain, and also provided with a wheel K, pivoted thereto, in combination with two separate wheels S S on the frame, adapted to alternately engage the wheel K, and a block or projection M, located between the wheels S S, to prevent the wheel K from being accidentally caught between them, substantially as herein described.

2. In an automatic grain-scale, the double-compartment box A, pivotally supported between hanger-arms suspended from a scale-beam and provided with an automatic detent, in combination with discharge-port covers having their outer edges hinged or pivotally connected with the lower ends of the hanger-arms, or the rods connecting the same, and their inner edges supported by links pivoted to the oscillating box in such a manner that said covers will swing and operate concurrently with the oscillation of the box, substantially as herein described.

3. In an automatic grain-scale, the oscil-

lating box A, pivoted in hanger-arms B B, suspended from a scale-beam and provided with a detent, in combination with swinging port-covers pivotally connected with the hanger-arms and supported by links *d d*, suspending from the box, said links being so adjusted that the covers will swing simultaneously with the oscillating of the box, substantially as herein described.

4. In an automatic grain-scale, a double-compartment oscillating box pivotally suspended between hanger-arms connected at their upper ends with a scale-beam, in combination with discharge-port covers connected at their outer edges directly or indirectly with the hanger-arms and having the inner edges suspended and supported by links pivotally connected with the weighing-box, substantially as herein described.

5. In an automatic grain-scale, a double-compartment oscillating weighing-box suspended between hanger-arms connected at their upper ends to a scale-beam fulcrumed on the head of an elevator, in combination with guide-bars H H, pivotally connecting the elevator with the hanger-arms below the scale-beam, and the guard-rollers *t t*, pivoted to brackets extending from the elevator, said guard-rollers being so adjusted that the tendency of their motion will coincide with the oscillating and vertical motion of the box, substantially as herein described.

6. In an automatic grain-scale, the combination of an oscillating double-compartment box A, pivoted in hanger-arms B B, suspended from a scale-beam, discharge-port covers pivotally connected at their outer edges with the hanger-arms and suspended at their inner edges by links pivoted to the box, the guide-bars H H, and guard-rollers *t t*, substantially as herein described.

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Witnesses:

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