

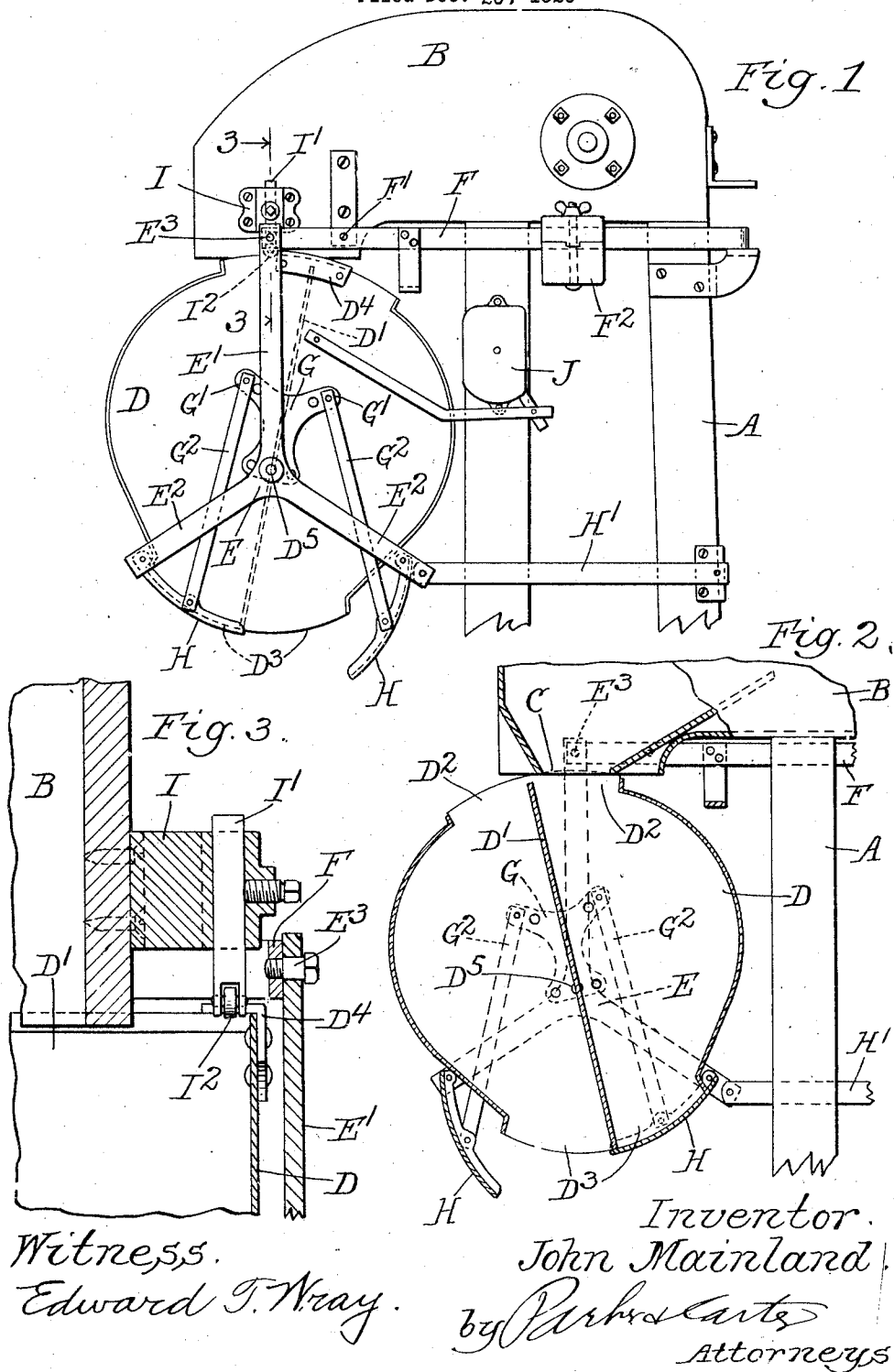
Sept. 11, 1923.

1,467,802

J. MAINLAND

AUTOMATIC WEIGHER

Filed Dec. 20, 1920



UNITED STATES PATENT OFFICE.

JOHN MAINLAND, OF LAPORTE, INDIANA, ASSIGNOR TO ADVANCE-RUMELY COMPANY, OF LAPORTE, INDIANA, A CORPORATION OF INDIANA.

AUTOMATIC WEIGHER.

Application filed December 20, 1920. Serial No. 431,841.

To all whom it may concern:

Be it known that I, JOHN MAINLAND, a citizen of the United States, residing at Laporte, in the county of Laporte and State of Indiana, have invented a certain new and useful Improvement in Automatic Weighers, of which the following is a specification.

This invention relates to an automatic scale of a type adapted for use with a separator, although it might of course, be used in many other connections. It is illustrated more or less diagrammatically in the accompanying drawings, wherein;

Figure 1 is a side elevation;

Figure 2 is a vertical sectional elevation of an oscillating bucket in operative position; and

Figure 3 is a detail section on line 3—3 of Fig. 1.

A is a grain elevator, the details of which form no part of this invention and which are therefore not illustrated in detail. It is provided with the hood B which has in its forward and downward end the discharge port C through which grain is adapted to be discharged into the bucket D. D' is a partition within the bucket which divides it into equal parts. D² D² are inlet ports in the bucket through which grain or other material may be dumped. D³ D³ are discharge ports in the bottom of the bucket. D⁴ is a trip angle located adjacent the inlet ports and along one side of the top of the bucket. The bucket D is pivoted at D⁵ in the Y frame E which has the upper extension E' and the two lower lateral extensions E² E². The upper end of the extension E' is pivoted at E³, in the scale beam F which is pivoted at F' on the part B and carries the weight F² adjustably mounted upon it. G is a member fixed to the side of the bucket D and having the lateral extensions G' G' in each of which is mounted the downwardly depending arms G² G². H H are doors adapted to close the ports D³ D³, they are mounted for rotation at one end, respectively, one in each of the arms E² E² and adjacent their center they are attached to the lower ends of the arms G² G² that is each of the doors H is pivoted at its outer edge on one of the arms E² and adjacent its center it is pivoted on one of the arms G². Thus when the bucket oscillates and the member G moves, the arms G² G² are moved up and down with it and by this up and down movement one of

the doors H closed and the other is simultaneously opened. By means of this construction when the bucket D is rotated with relation to the frame E the doors H H are opened and closed automatically in response to such rotation. H' is a strip secured to the elevator A and to one of the parts E² and is adapted to steady the bucket during its operation. I is a bracket mounted on the hood B, on which the roller bar I' is adjustably mounted. I² is a roller mounted for rotation in the lower end of the roller bar I' and is adapted to be contacted by the trip angle D⁴. J is a counting mechanism adapted to count the oscillation of the bucket and thus to register the material which is passed through the bucket.

The counting and supporting mechanism of the bucket has been described with reference to parts shown in Figure 1. Of course the tipping mechanism is re-produced on each side of the bucket the scale beam is preferably made in the shape of a yoke surrounding the upper end of the elevator. The trip angle and trip roller bar may be used only on one side of the mechanism although it is possible to have a trip mechanism on each side of the elevator.

Although I have shown in my drawings an operative mechanism, still it will be obvious that many changes both in form, shape and arrangement of parts may be made without departing from the spirit of my invention, and I wish therefore, that my showing be considered as in a sense diagrammatic.

The use and operation of this invention are as follows:

The bucket is adapted to be used in connection with the controlled discharge of material where it is advisable to weigh such material as it is discharged. For this purpose the bucket is mounted on one end of the scale beam and is adapted to be discharged whenever the weight of the contents of the bucket has become sufficient to overbalance the scale beam.

When the bucket is in the position shown in Figure 1 the material is discharged from the elevator into the left hand portion of the bucket. When the material in this portion of the bucket is sufficient to depress the scale beam in opposition to the weight upon it the trip angle disengages the roller which is at the lower end of the roller bar and the bucket

is then free to rotate and because it is unevenly loaded it rotates to the left into the position shown in Fig. 2. As this rotation takes place, the gate of the filled section of the bucket is automatically opened and discharge commences, at the same time the gate of the empty compartment is automatically closed and material is discharged from the elevator into that part of the bucket. When sufficient grain has been discharged from the loaded side of the bucket the weight again arises and the beam at the opposite end of the trip angle comes in contact with the trip roller and remains in that relation until the weight of grain on the right hand side of the bucket has become sufficient to depress the bucket and then that compartment is dumped. The left side of the bucket will be entirely empty before the right side is sufficiently loaded to tip the bucket again. This operation takes place repeatedly and automatically as long as material in sufficient quantities is fed into the bucket.

I claim—

1. In an automatic grain scale, an elevator, a scale beam, and a bucket supported

from said beam and adapted to rise and fall therewith and mounted for oscillation about a pivot point, a rigid means for preventing said oscillation when said bucket is raised, said means being in vertical alignment with the pivot point of said bucket.

2. In an automatic grain scale, an elevator, a scale beam, and a bucket supported from said beam and adapted to rise and fall therewith and mounted for oscillation about a pivot point, a rigid means for preventing said oscillation when said bucket is raised, said means being in vertical alignment with the pivot point of said bucket, said bucket provided with a central interior partition, a pair of bottom openings one on either side of said partition, and a pair of hinged gates one for each of said openings, said gates adapted to be opened alternately by the oscillation of said bucket, and means secured to the side of said bucket for operating said gates.

Signed at Laporte county of Laporte and State of Indiana, this 17th day of December 1920.

JOHN MAINLAND.