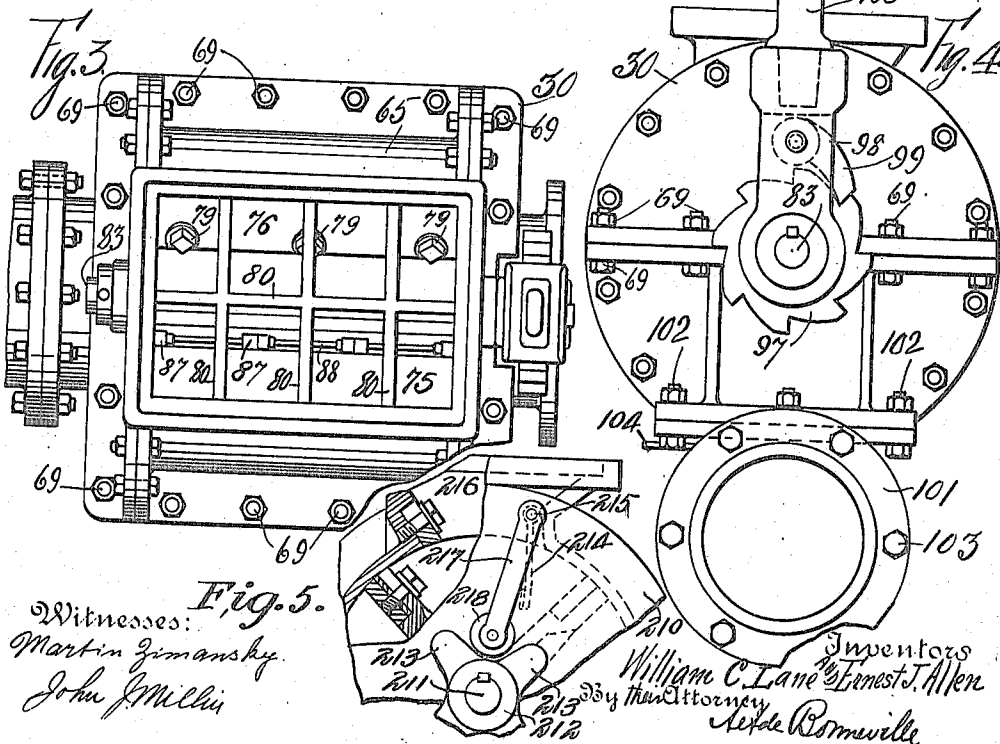
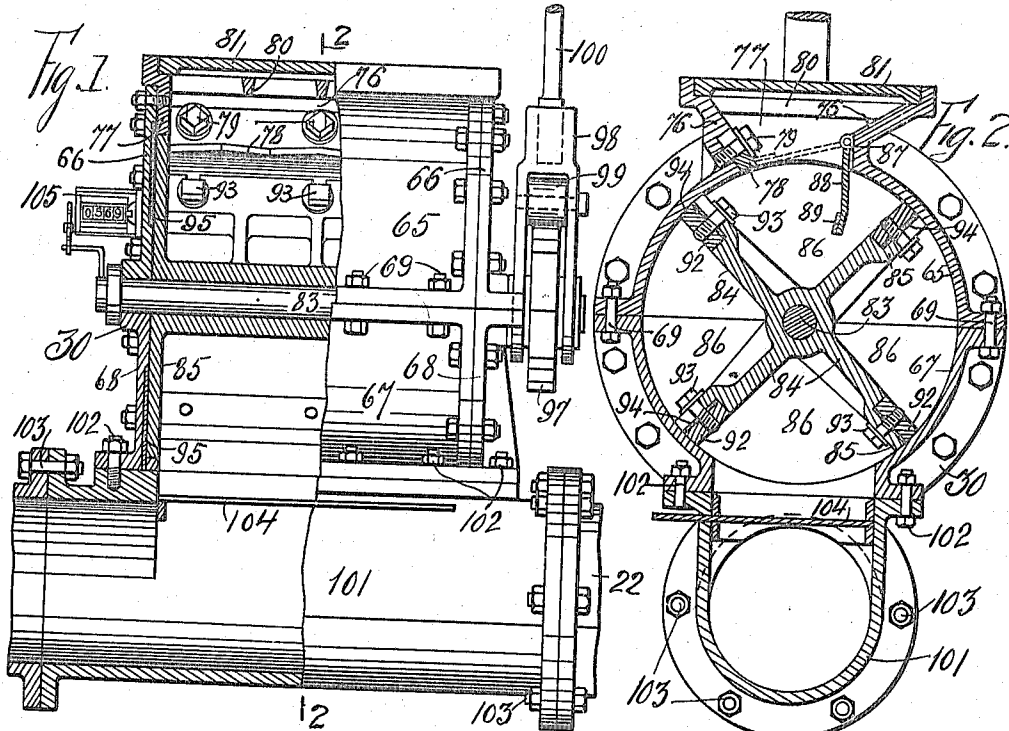


W. C. LANE & E. J. ALLEN.
 FEED REGULATOR.
 APPLICATION FILED APR. 14, 1910.

1,143,634.

Patented June 22, 1915.



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UNITED STATES PATENT OFFICE.

WILLIAM C. LANE AND ERNEST J. ALLEN, OF BROOKLYN, NEW YORK.

FEED-REGULATOR.

Specification of Letters Patent. Patented June 22, 1915.

1,143,634.

Application filed April 14, 1910. Serial No. 555,468.

To all whom it may concern:

Be it known that we, WILLIAM C. LANE, a citizen of the United States, and ERNEST J. ALLEN, a subject of Great Britain, both residents of the borough of Brooklyn, county of Kings, State of New York, have invented certain new and useful Improvements in Feed-Regulators, of which the following is a specification.

10 This invention relates to a feed regulator which may be used with a pneumatic conveyer system for measuring and delivering material thereto. It is specially applicable for handling the ashes from a furnace, but
15 it is to be understood that it can be used for many other purposes and materials.

Figure 1 shows an enlarged elevation and vertical axial section of the feed regulator; Fig. 2 is a section of Fig. 1 on the line 2, 2;
20 Fig. 3 represents a top plan view of the regulator; Fig. 4 shows a right hand side view of Fig. 1; and Fig. 5 shows a partial side view partly in section of a modification of the invention.

25 The regulator is designated in its entirety by the numeral 30, and comprises a drum with the upper portion 65 having the end walls 66, and the lower portion 67 with the end walls 68. The portions 65 and 67
30 are bolted together by means of the bolts 69. An inlet hopper is formed with the measuring intake and comprises the inclined front wall 75 and the inclined rear wall 76. End walls like 77 for said inlet
35 hopper are bolted to the end walls 66 of said drum. To the inclined wall 76 is adjustably bolted the serrated cutting blade 78 by means of the bolts 79. The said blades 78 extend the full axial length of the measuring chambers to be described. Sizing bars 80 extend between the walls 75 and
40 76, and a cover 81 is pivoted for said inlet hopper. From the wall 75 extend lugs 87 to which is pivoted the protecting door 88 that carries a cutting strap 89. With the walls 66 and 68 are formed journal bearings for the drum shaft 83, that carries a blade wheel with the arms 84 and end walls 85 forming the measuring chambers 86. To
50 the arms 84 are secured the cutting blades 92, that extend between the walls 85, by means of the bolts 93 and flexible packing strips 94 are clamped between the blades 93 and the outer portions of the arms 84, which
55 strips bear against the inner cylindrical surfaces of the portions 65 and 67 of the drum.

The said packing strips 94 pack the arms with said portions 65 and 67. In the end walls 66 and 68 are formed annular cavities for the flexible packing 95, to prevent
60 leakage between the end walls, 68 and the end walls 85 of the blade wheel.

On the drum shaft 83 is carried the ratchet wheel 97. A socket arm 98 pivoted on the shaft 83 carries the pawl 99 which
65 can engage the said ratchet wheel 97 and air operating bar 100 engages said socket arm.

The lower portion 67 of the drum is bolted to the outlet pipe connection 101 by means of the bolts 102, and the said pipe connection is bolted to the horizontal piping
70 22 by means of the bolts 103. A cut-off valve 104 is connected up with each pipe 101, to enable the drum of any intake, if a
75 number are used, to be separated from its pipe connection without interfering with the operations of the system for which the intakes are employed. The drum shaft 83 is connected up with a counter 105 extending
80 from one of the end walls like 66 of the measuring intake.

The invention can be modified by lifting the protecting door, by means of a cam having a number of projections corresponding
85 in number to the number of charging chambers in the blade wheel. In Fig. 5 an intake 210 has journaled thereto the drum shaft 211 which has fastened thereto the cam 212 with the four projections like 213. The
90 protecting door 214 is pivoted to the wall of the inlet hopper 216 by means of the spindle 215, which extends from the outside of the said hopper. The spindle has fastened thereto the arm 217 carrying the roller
95 218, which latter is in the path of the projections 213 of the cam 212. By means of the modifications during the operations of the apparatus, the protecting door 214 does not come in contact with the arms 219 of the
100 blade wheel of the intake, because the projections 213 swing the roller 218 to clear the latter, and by means of which the door 214 is swung on the spindle 215.

To operate the invention and referring
105 particularly to Figs. 1 to 4, the material to be handled is deposited into the inlet hopper of the intake 30, after lifting the covers 81 of the funnels thereof. When one of the measuring chambers 86 is charged the op-
110 erator by means of the operating bar 100 turns the blade wheel having the arms 84,

so that the next adjacent measuring chamber registers with the opening through the inlet hopper of the intake. When the blade wheel turns and as soon as one of the arms 84 bears against the protecting door 88, the latter is swung up, gradually closing the opening through the inlet hopper of the intake, until the cutting strip 89 engages the serrated cutting blade 78. Any material coming between said blades will be sheared or crushed. At the same time the protecting door prevents any of the charge from the inlet hopper from dropping the ends of the arms 84 and the cutting blades 92 as they pass the inlet hopper. With the rotation of the blade wheel the cutting blades 92 coact with the serrated cutting blades 78, and any material which is liable to become clogged between the said blades is sheared or crushed. When the blade wheel turns its revolutions are recorded by means of the counter 105. The flexible packing strips 94 prevent leakage of air between the portions 65 and 67 of the drum of the intake and the ends of the blade wheel, while the flexible packing 95 prevents leakage of air between the end walls 66, 68 of the intake and the ends 85 of the blade wheel. From the intakes 80 the charges of ashes are deposited into the pipe connections 101 from which it is conveyed by the piping 22 preferably by an air blast in the latter.

Having described our invention what we desire to secure by Letters Patent and claim is:

1. The combination in a measuring intake of a drum, an inlet hopper for the drum, a cutting blade connected to a wall of the

hopper, a blade wheel in said drum, a protecting door pivoted in said hopper and the swinging end thereof in the path of the blades of the blade wheel and a cutting strip on the swinging end of the door to coact with the cutting blade of the wall of the hopper.

2. The combination in a measuring intake of a drum, an inlet hopper for the drum, a blade wheel in said drum, a shaft journaled in said drum for said wheel, a protecting door pivoted in said hopper, and connections on the outside of the intake between the shaft in the drum and said protecting door to actuate the latter during the rotations of the shaft, with an easy and continuous movement.

3. The combination in a measuring intake of a drum, an inlet hopper for the drum, a blade wheel in said drum, a shaft journaled in the drum for said wheel, a spindle pivoted in said hopper and extending out of the same, a protecting door in the hopper pivoted on said spindle, a cam on the said shaft on the outside of the intake and an arm on said spindle with its swinging end in the path of said cam, the said protecting door opening and closing with an easy and continuous movement.

Signed in the borough of Manhattan in the county of New York and State of New York this 6th day of April, A. D. 1910.

WILLIAM C. LANE.
ERNEST J. ALLEN.

Witnesses:

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