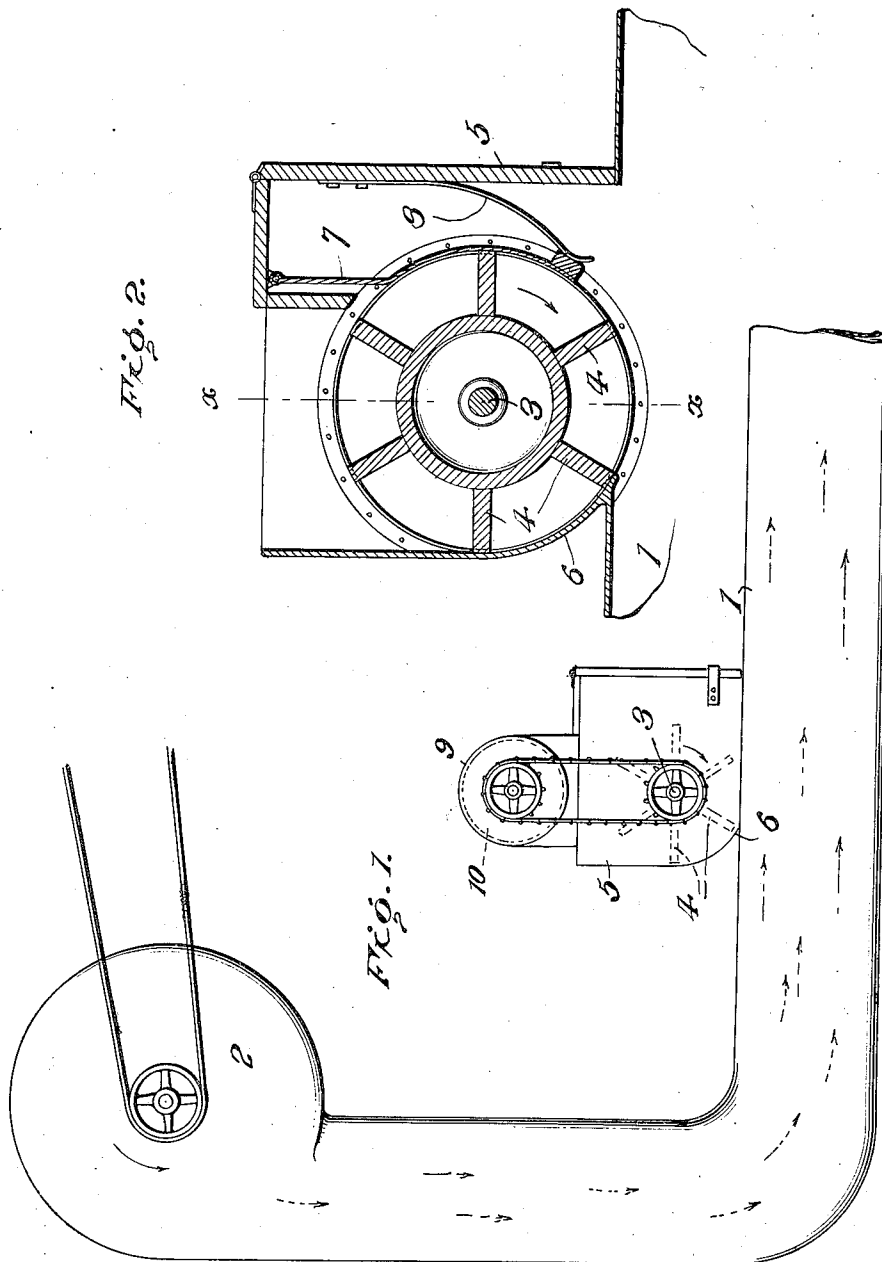


No. 874,752.

PATENTED DEC. 24, 1907.

W. E. ETHRIDGE.
VALVE DISCHARGE.
APPLICATION FILED APR. 2, 1907.

2 SHEETS—SHEET 1.



Inventor

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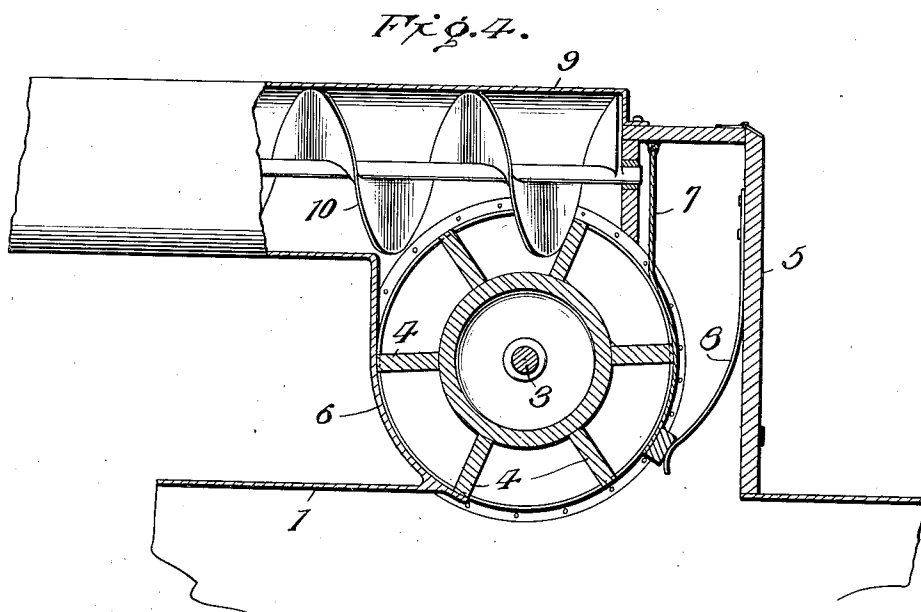
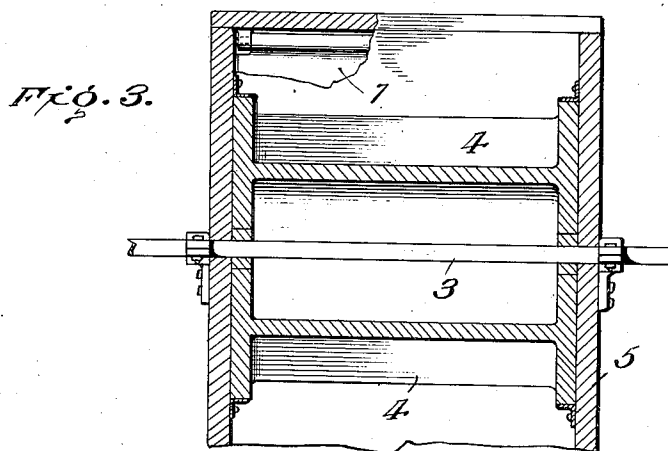
By *W. E. Ethridge*
Attorneys

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UNITED STATES PATENT OFFICE.

WILLIAM E. ETHRIDGE, OF SCHLATER, MISSISSIPPI.

VALVE-DISCHARGE.

No. 874,752.

Specification of Letters Patent.

Patented Dec. 24, 1907.

Application filed April 2, 1907. Serial No. 366,031.

To all whom it may concern:

Be it known that I, WILLIAM E. ETHRIDGE, citizen of the United States, residing at Schlater, in the county of Leflore, State of Mississippi, have invented certain new and useful Improvements in Valve-Discharges, of which the following is a specification.

This invention relates to means for preventing back current of pneumatic conveyer for discharging material of any kind and is particularly adapted for the pneumatic discharge of cotton gins and mills.

For a full description of the invention and the merits thereof and also to acquire a knowledge of the details of construction and the means for effecting the result, reference is to be had to the following description and accompanying drawings.

While the invention may be adapted to different forms and conditions by changes in the structure and minor details without departing from the spirit or essential features thereof, still the preferred embodiment is shown in the accompanying drawings, in which:

Figure 1 is a side view of a pneumatic discharge or conveyer provided with a valve embodying the invention. Fig. 2 is a sectional view of the valve showing the parts on a larger scale. Fig. 3 is a sectional view of the valve on the line $x-x$ of Fig. 2. Fig. 4 is a modification showing the spiral flight of the feeder meshing with the blades of the rotary valve.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

The numeral 1 indicates the pneumatic discharge which may be either of the blast or suction type, the valve being of special advantage in connection with a blast discharge since it prevents the air pressure affecting the delivery of the material to the discharge for conveyance thereby to the required point. The pneumatic discharge may consist of a pipe duct or conveyer of any type such as commonly employed for directing material to the required point of delivery. A fan blower 2 is connected with the discharge 1 and creates a current therethrough for moving the material to the end thereof. At the point of delivery of the material to the discharge 1, is located the valve which is of such construction as to prevent any back current,

yet insuring a positive delivery of the material to the discharge.

The valve is of the rotary type and comprises a shaft 3 and blades 4, the spaces between the blades forming pockets or receptacles which receive a quantity of the material and deliver the same into the conveyer or pneumatic discharge 1. The rotary valve is arranged within a box or casing 5 which opens into the conveyer or discharge 1 to insure delivery of the material thereto. The bottom portion of the box or casing is formed on the arc of a circle corresponding to the diameter of the rotary valve to insure a close fit between said valve and the box or casing with the result of preventing air entering between the valve and bottom portion 6 of the box or casing and passing into the feeder or other device by means of which the material is delivered to the valve and by the latter to the discharge or pneumatic conveyer. An apron 7 is adapted to bear against the rotary valve at a point about opposite to the rounded part 6 of the box or casing and serves to prevent air from the pneumatic conveyer passing by the valve into the feeder. The apron 7 is hinged or pivoted at its upper end and is pressed towards the valve at its lower end by means of a spring 8 which may be of any type. The ends of the valve fit the sides of the box or casing 5 close to prevent air passing thereby into the feeder. The rotary valve may be of any size, capacity and construction and may be formed of wood or metal or other selected material best adapted for the purpose.

The valve in operation is rotated so that its upper portion travels towards the apron 7 and by having the latter spring actuated for yielding, it may move to permit any material to pass which would otherwise lodge between the rotary valve and apron and either produce binding or tend to displace or strain the mechanism. The feeder 9 may be a trough, chute, or pipe and is adapted to receive the material to be delivered to the pneumatic conveyer or discharge 1. The valve is interposed between the feeder and discharge and receives the material from the feeder and delivers the same into the pneumatic discharge. In cotton gin machinery, the feeder 9 may be the seed conveyer box into which the seed from the gins are delivered and conveyed thereby to the pneumatic discharge. A spiral or auger con-

veyer 10 is arranged in the box or trough 9 to positively move the seed or material therethrough and towards the rotary valve. The shafts of the spiral conveyer and the rotary valve may be connected in any manner as by sprocket gearing as shown in Fig. 1 or by having the spiral flight of the conveyer engage directly with the blades of the rotary valve as indicated in Fig. 4.

10 The manner of imparting rotary movement to the valve is immaterial so long as the same is positively driven, but in some instances the construction shown in Fig. 4, *i. e.*, by having the flight of the conveyer 10 engage with the blades of the rotary valve may be preferred, thereby economizing space and greatly simplifying the construction.

Having thus described the invention, what is claimed as new is:

20 1. In combination, a pneumatic discharge, a feeder, a rotary valve located intermediate the feeder and pneumatic discharge, and a spring actuated apron held in contact with

said rotary valve to prevent air from the pneumatic discharge passing into the feeder. 25

2. In combination, a pneumatic discharge, a feeder and a valve mechanism between the feeder and pneumatic discharge, the same comprising a box having a bottom portion made rounding, a rotary compartment valve 30 located within the box and closely fitting the rounded bottom portion of the same, and a spring actuated apron in contact with the valve at a point opposite to the rounded portion of the box, thereby preventing air 35 from the pneumatic discharge finding its way into the feeder and insuring positive and regular discharge of the feeder into the pneumatic conveyer.

In testimony whereof I affix my signature 40 in presence of two witnesses.

WILLIAM E. ETHRIDGE. [L. s.]

Witnesses:

JAMES F. CROWELL.
HARRY KAHN.