

1,245,868.

Patented Nov. 6, 1917.
 2 SHEETS—SHEET 1.

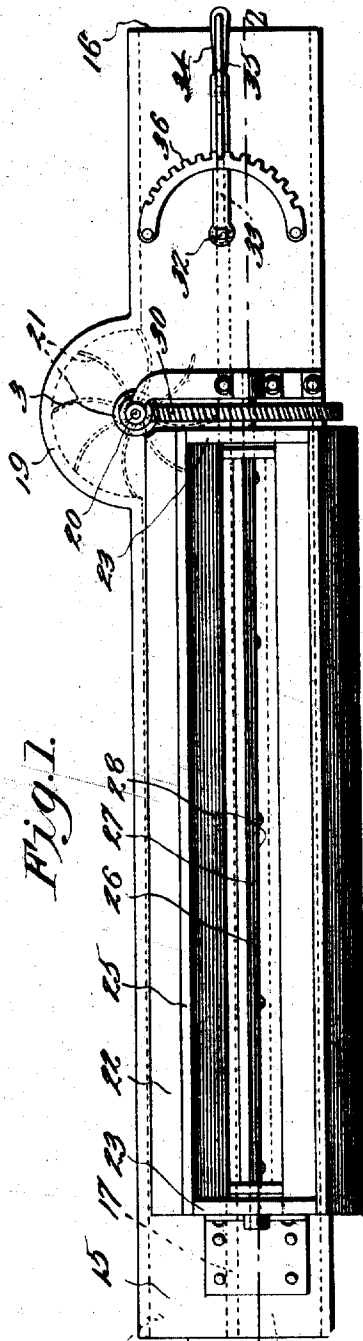


Fig. 1.

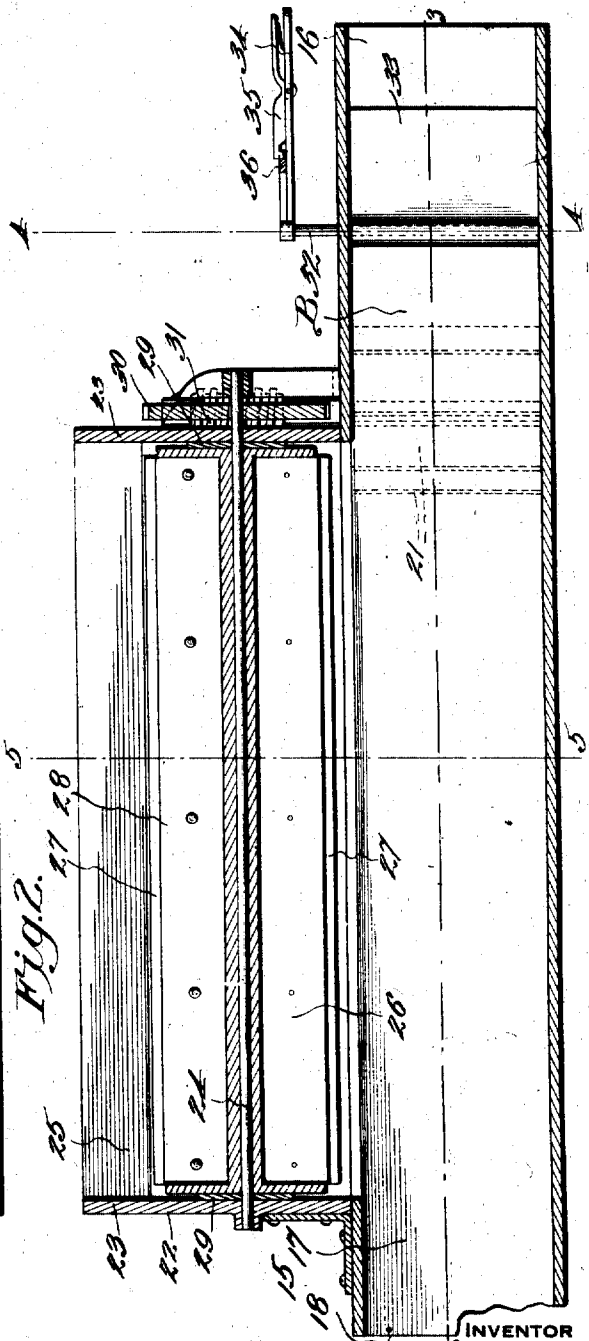


Fig. 2.

WITNESSES

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 2 SHEETS—SHEET 2.

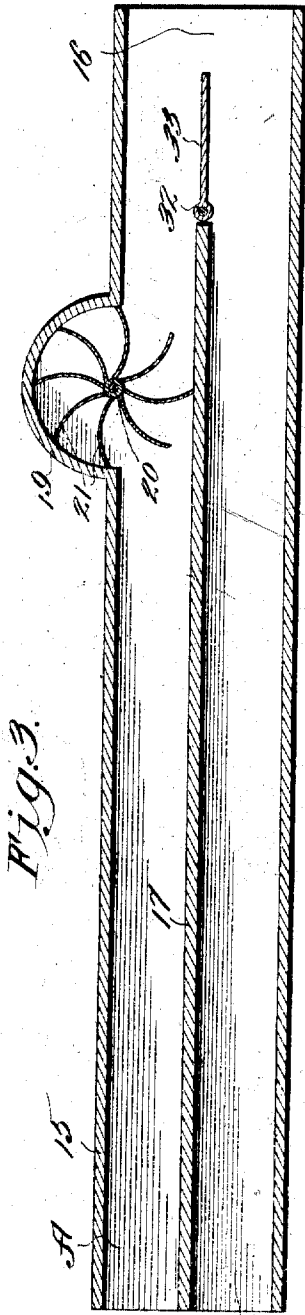


Fig. 3.

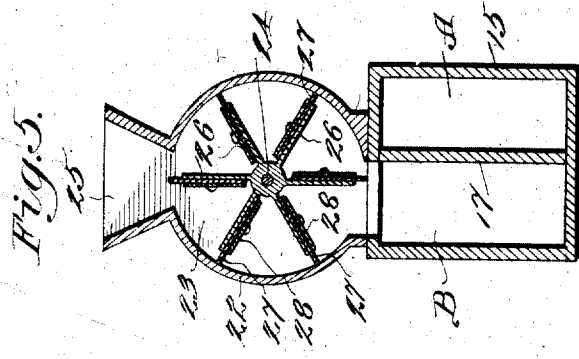


Fig. 5.

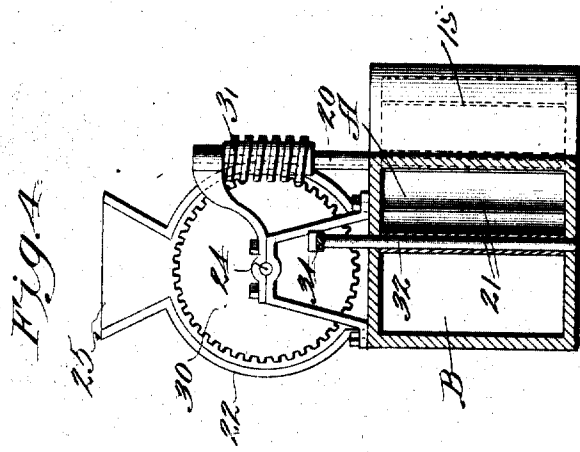


Fig. 4.

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UNITED STATES PATENT OFFICE.

CHARLES B. CAFFEY, OF ELGIN, TEXAS.

PNEUMATIC CONVEYER.

1,245,868.

Specification of Letters Patent.

Patented Nov. 6, 1917.

Application filed January 19, 1917. Serial No. 143,349.

To all whom it may concern:

Be it known that I, CHARLES B. CAFFEY, a citizen of the United States, residing at Elgin, in the county of Bastrop and State of Texas, have invented new and useful Improvements in Pneumatic Conveyers, of which the following is a specification.

This invention relates to pneumatic conveyers, and it has particular reference to conveyers of this class which are used for handling cotton seed that is being discharged from gins, hulls, cotton meal and other products.

One object of the invention is to produce a pneumatic conveyer having a feeder which is actuated by the air current passing through the trunk or duct of the conveyer.

A further object of the invention is to simplify and improve the construction and operation of the conveyer, the feeder and the driving means therefor.

A further object of the invention is to produce a device of the class described of simple and improved construction having means whereby the air current may be controlled.

With these and other ends in view which will readily appear as the nature of the invention is better understood the same consists in the improved construction and novel arrangement and combination of parts which will be hereinafter fully described and particularly pointed out in the claims.

In the accompanying drawings has been illustrated a simple and preferred form of the invention, it being, however, understood that no limitation is necessarily made to the precise structural details therein exhibited, but that changes, alterations and modifications within the scope of the claims may be resorted to when desired.

In the drawings,—

Figure 1 is a top plan view of a device constructed in accordance with the invention.

Fig. 2 is a longitudinal sectional view taken on the line 2—2 in Fig. 1.

Fig. 3 is a horizontal sectional view taken on the line 3—3 in Fig. 2.

Fig. 4 is a transverse sectional view taken on the line 4—4 in Fig. 2.

Fig. 5 is a transverse sectional view taken on the line 5—5 in Fig. 2.

Corresponding parts in the several figures are denoted by like characters of reference.

The trunk or duct 15 of the improved

pneumatic conveyer is provided at one end with an intake 16 which receives air under pressure from a suitable source of supply. The duct or trunk 15 has a longitudinal partition 17, one end of which is spaced from the intake 16, while the other end of said partition may extend to the discharge end 18 of the duct. The trunk or duct is thus divided into two longitudinal passages A and B. The passage A communicates at a distance from the intake end of the duct with an approximately semi-cylindrical chamber 19 through which extends a vertical shaft 20, said shaft being concentric with the arcuate wall of the chamber, and said shaft carrying a plurality of wings or blades 21 which are of such dimensions as to extend at one side to the partition wall 17 and at the other side to the wall of the chamber 19, said blades being, moreover, curved transversely so as to present concave faces in the direction of the air intake 16.

Mounted on the top wall of the trunk or duct 15 is a feeder casing 22 of approximately cylindrical shape, said casing having end walls 23 affording bearings for a longitudinal shaft 24. The bottom of the feeder casing communicates with the passages B of the duct or trunk, and the top of the feeder casing has a hopper 25 which receives from any suitable source of supply, such as a gin casing, not shown, the material, such as cotton seed, that is to be handled by the pneumatic conveyer. The shaft 24 is provided with radially extending wings 26 having flexible brushes 27 of leather, rubber or other material adjustably connected therewith by clamp plates 28, the construction being such that as the brushes become worn they may be adjusted to engage the arcuate walls of the feeder casing. A sufficient number of brush carrying wings should be placed on the shaft 24 to constantly form an air tight closure between the hopper 25 and the passage B when the machine is in operation. The shaft is provided adjacent to the end walls 23 with packing disks 29.

One end of the shaft 24 carries a worm gear 30 meshing with a worm 31 on the vertical shaft 20, thus causing the feeder shaft to be driven by the vertical shaft 20 when the latter is rotated.

Mounted in the trunk or duct 15 adjacent to that end of the partition 17 which faces the intake 16 is a vertical shaft 32 carrying a valve 33 that extends in the direction of

the intake. The shaft 32 has an operating lever 34 provided with a spring actuated stop member 35 engaging a segment rack 36 for the purpose of retaining the valve in any position to which it may be adjusted.

It will be seen that by proper manipulation of the lever 34 the valve 33 may be adjusted so as to direct the inrushing air current into either one of the passages A and B, or partly into each of said passages, the proportion of air entering either passage being regulated by the position of the valve. The shaft 20 having the arcuate blades 21 constitutes a motor which is driven by the air current passing through the passage A, said motor serving to drive the shaft of the feeder, causing material to drop into the passage B where it is taken up by the air current rushing through said passage and conveyed to the discharge end of said passage. It is obvious that when desired the valve 33 may for a time be adjusted to direct the entire air current through the passage A, thereby causing the operation of the feeder until a quantity of material has accumulated in the passage B, after which the position of the valve may be changed to deflect the entire air current into the passage B carrying the accumulated material to the point of discharge.

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

1. In a pneumatic conveyer, a wind trunk having two passages, a feeder communicating with one passage and having an operating shaft, a pneumatic motor having blades extending within the other passage of the wind trunk, and means for transmitting power from said motor to the feeder shaft.

2. In a pneumatic conveyer, a wind trunk having two passages, a feeder communicating with one passage and having an operating shaft, a pneumatic motor having blades extending within the other passage of the wind trunk, means for transmitting power from said motor to the feeder shaft, and valve means for controlling the delivery of an incoming air current to the two passages.

3. In a pneumatic conveyer, a wind trunk having a partition forming two longitudinal

passages, a feeder communicating with one passage, said feeder having an operating shaft, a pneumatic motor having wings extending within the other passage in the direction of the partition, and means for transmitting power from the motor to the feeder shaft for driving the latter.

4. In a pneumatic conveyer, a wind trunk having a partition whereby two longitudinal passages are formed, a feeder communicating with one passage, a pneumatic motor comprising a shaft having wings extending into the other passage in the direction of the partition, transmission means between the motor shaft and the feeder shaft, and a valve supported in the intake end of the wind trunk adjacent to one end of the partition.

5. In a pneumatic conveyer, a wind trunk having an air intake at one end provided with a partition forming two longitudinal passages, a valve supported adjacent to one end of the partition and extending in the direction of the intake end of the trunk to regulate the incoming air current, a feeder communicating with one passage, a pneumatic motor comprising a shaft having wings or blades extending into the other passage in the direction of the partition, an operating shaft extending longitudinally through the feeder and having a worm gear, and a worm on the motor shaft meshing with said gear.

6. In a pneumatic conveyer, a wind trunk having a partition forming longitudinal passages, an approximately cylindrical feeder casing communicating with one passage and having a hopper to receive material from a source of supply, a shaft extending longitudinally through the feeder casing and having wings provided with brushes engaging the arcuate walls of the casing, a pneumatic motor operable by an air current passing through the other passage, means for transmitting motion from the motor to the feeder shaft, and a valve to regulate an air current passing through the wind trunk and to deflect such air current with respect to the passages of said trunk.

In testimony whereof I affix my signature.
CHARLES B. CAFFEY.