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E. T. SONENDRIKER.

FEEDING ATTACHMENT FOR PNEUMATIC CONVEYERS.

APPLICATION FILED SEPT. 29, 1902.

NO MODEL.

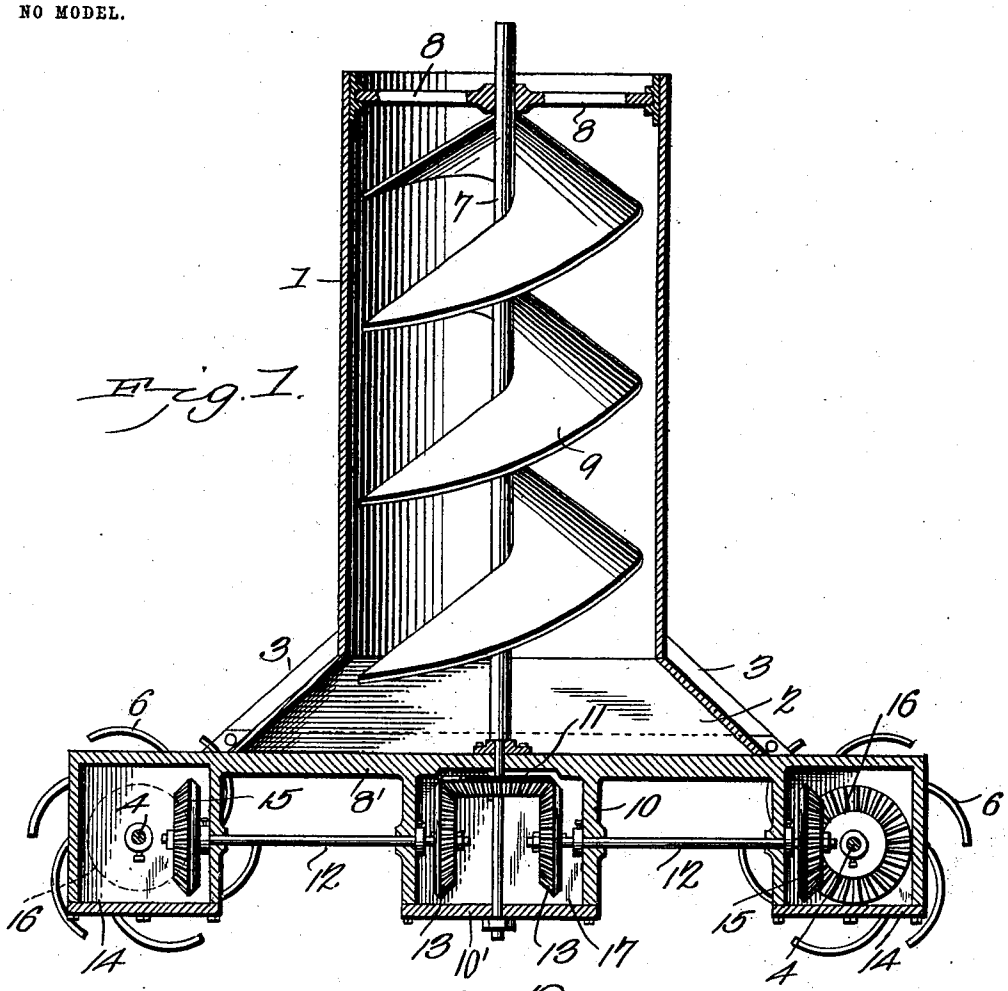


Fig. 1.

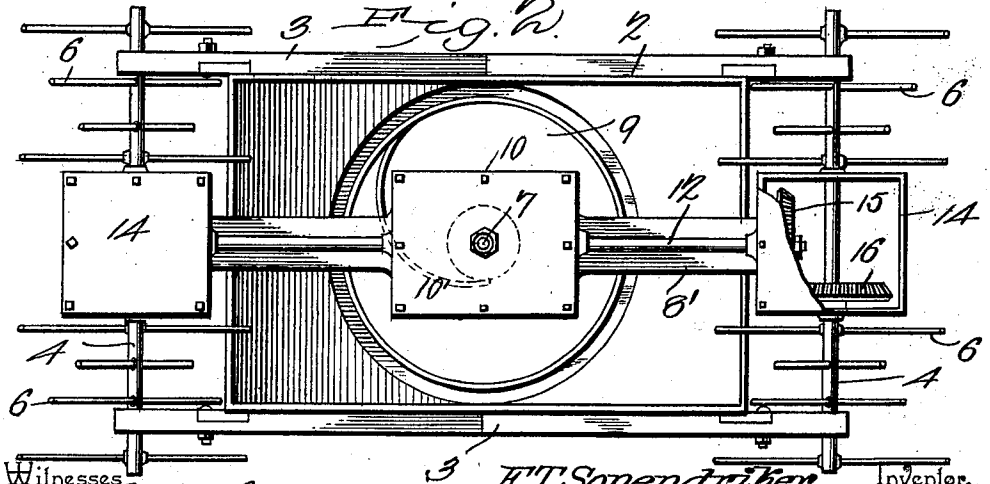


Fig. 2.

Witnesses
E. P. Stewart
Jno. E. Parker

Inventor.
E. T. Sonendriker,
by C. A. Snow & Co
Attorneys

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 753,928. Patented March 8, 1904.

UNITED STATES PATENT OFFICE.

EDWARD THOMAS SONENDRIKER, OF GOLDEN, TEXAS, ASSIGNOR OF ONE-HALF TO MATTHEW WALTON COLEMAN, OF GOLDEN, TEXAS.

FEEDING ATTACHMENT FOR PNEUMATIC CONVEYERS.

SPECIFICATION forming part of Letters Patent No. 753,928, dated March 8, 1904.

Application filed September 29, 1902. Serial No. 125,271. (No model.)

To all whom it may concern:

Be it known that I, EDWARD THOMAS SONENDRIKER, a citizen of the United States, residing at Golden, in the county of Wood and State of Texas, have invented a new and useful Feeding Attachment for Pneumatic Conveyers, of which the following is a specification.

This invention relates to certain improvements in the pneumatic conveying apparatus employed for handling cotton and like material, and especially to the devices employed for delivering large quantities of cotton to ginneries, and has for its principal object to provide the inlet end or mouth of the conveyer with an attachment for feeding the cotton thereto in an even and regular manner.

A further object of the invention is to provide a feeding attachment operable by the current of air induced through the conveyer-tube by a suction-fan, and, further, to so construct the attachment as to render the same entirely automatic in its action, thus dispensing with hand-feeding and the danger of choking from the feeding of excessive quantities of cotton. The feeding attachment is designed to regulate the feed in accordance with the strength of the air-current and varies as the volume of air passing through the conveyer increases or decreases.

With these and other objects in view the invention consists in the novel construction and arrangement of parts hereinafter described, illustrated in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that various changes in the form, proportions, size, and minor details of the structure may be made without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings, Figure 1 is a longitudinal sectional elevation of the lower end or inlet-mouth of a pneumatic conveyer provided with an automatic feeding device constructed in accordance with my invention. Fig. 2 is an inverted plan view of the same.

The device forming the subject of the present invention is adapted more especially for use in connection with the suction feed-pipes employed for the delivery of cotton to a ginnery, the cotton being usually hauled in wagons from the fields to the ginnery and fed by hand to the mouth of the cylindrical pipe or tube through which a current of air is induced by a suction-fan. The delivery of cotton in this manner is not only slow and laborious, but the workmen in endeavoring to unload rapidly often feed quantities of cotton in excess of the capacity of the fan and choke the conveyer-tube. The device forming the subject of the present invention is designed to feed the cotton from the wagon automatically and in quantities proportionate to the strength of the air-current, so that no choking can result, and at the same time the feeding is rendered automatic and manual labor dispensed with.

In the drawings, 1 represents a portion of the lower rim of a conveyer-tube, which may be telescopically adjustable with relation to the main tube-sections and free to move in any direction, as is usual in pneumatic conveyers of this type. The mouth of the conveyer is preferably in the form of a rectangular box 2 in place of the usual circular mouth, and at a point adjacent to each side of the section 2 is a frame 3, forming bearings for the reception of a pair of parallel shafts 4, arranged adjacent to the opposite sides of the mouth of the conveyer. Each shaft is provided with a plurality of picker fingers or teeth 6, which as the shafts are revolved pick up small quantities of cotton and throw the same into the mouth of the conveyer or in position where it will be under the influence of the air-current entering said conveyer.

In the conveyer-tube 1 is a centrally-disposed shaft 7, adapted to suitable bearings formed in an upper cross-bar 8 and a lower cross-bar 8′, and to said shaft is secured a helical strip 9, preferably formed of sheet metal and revoluble, together with the shaft, by the incoming air-current. To the lower cross-bar 8′ is secured a hanger 10 in the form of a box or casing, the lower portion of which is closed by a plate 10′, and on said shaft is a bevel-gear 11. The hanger is also provided with bearings for the reception of the inner ends of a pair of alining shafts 12,

the outer ends of which are adapted to bearing-boxes formed in small gear-casings 14, supported by the lower cross-bar 8. Each shaft 12 is provided at its inner end with a bevel-gear 13, intermeshing with the bevel-gear 11 of the shaft 7, and at the outer end of each of the shafts 12 is a bevel-gear 15, intermeshing with a bevel-gear 16 on the shaft 4. The bevel-gears 15 and 16 are housed within the gear-casing 14 to prevent the cotton from catching in the teeth of the gears, and the driving-gears are likewise housed in a casing formed partly by the hanger 10 and partly by side plates 17, as shown in Fig. 1.

In the operation of the device the suction-fan is started and the air-current passing through the conveyer-tube rotates the helix 9 and shaft 7 at a speed proportionate to the capacity of the fan and the volume of air drawn through the tube. This revolves the picker-shafts through the medium of the connecting-gearing, and the mouth of the conveyer-tube is then placed over the load of cotton, being moved as often as necessary, while the picker-fingers deliver small quantities of cotton to the mouth of the tube or within the range of the air-current. The feed is more regular than can be accomplished by hand, is more rapid than hand-feeding, and finally the speed of the picker-shafts is in direct proportion to the strength of the air-current, so that the quantity of cotton fed to the tube is increased or diminished as the strength of the current varies, and in no case can the quantity fed be sufficient to choke the conveyer.

While the apparatus is intended principally for handling cotton, it will be understood that it may be employed in connection with any other material without departing from the invention.

Having thus described my invention, what I claim is—

1. A pneumatic conveyer having an automatic feeding attachment arranged adjacent to the mouth of said conveyer and operable by the air-current through the conveyer-tube.

2. The combination with a pneumatic conveyer, of a feeding attachment operable by the air-current in the conveyer-tube for engaging the material to be fed in advance of its entrance to said tube.

3. The combination with a pneumatic conveyer-tube, of a feeding mechanism arranged adjacent to the inlet-mouth of the tube and operable by the air-current passing through said tube.

4. The combination with a pneumatic conveyer-tube, of a plurality of picker-fingers arranged adjacent to the mouth of the tube and adapted to feed the material to be conveyed, a revoluble member disposed within the tube and operable by a current of air passing therethrough and means for transmitting motion from the revoluble member to said picker-fingers.

5. The combination with a pneumatic conveyer-tube, of a pair of revoluble shafts arranged adjacent to the inlet-mouth of the tube, shaft-supporting means, a revoluble member disposed within the tube and operable by a current of air passing therethrough, means operatively connecting said member to the shafts, and picker-fingers carried by said shafts.

6. The combination with a pneumatic conveyer-tube, of a rectangular casing forming the inlet-mouth of the tube, shafts disposed at each side of the casing, picker-fingers on said shafts, a centrally-disposed shaft within the conveyer-tube, cross-bars supporting said shaft, a helix mounted on the shaft and revoluble by a current of air passing through the tube, and bevel-gearing connections between said shafts and the picker-finger shafts.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

EDWARD THOMAS SONENDRIKER.

Witnesses:
W. R. LOVIN,
M. W. COLEMAN.