(No Model.)

W. E. ELAM.

COTTON CONVEYING AND CLEANING APPARATUS.

No. 423,040. Patented Mar. 11, 1890.

Fig. 1.

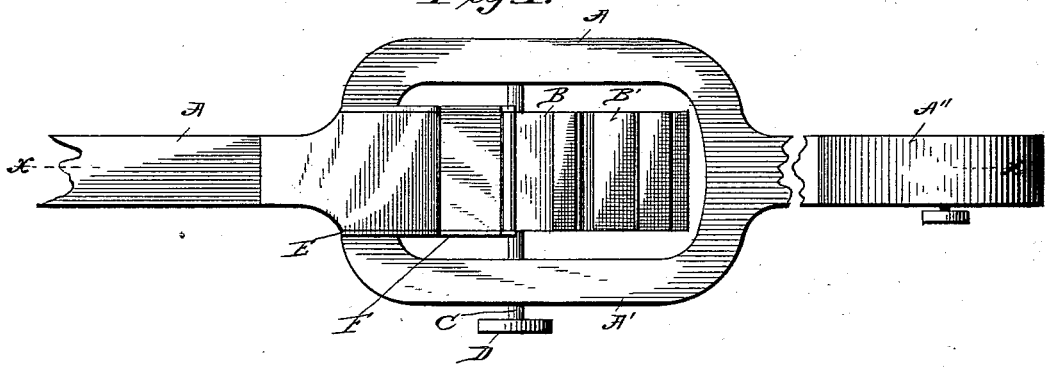


Fig. 2.

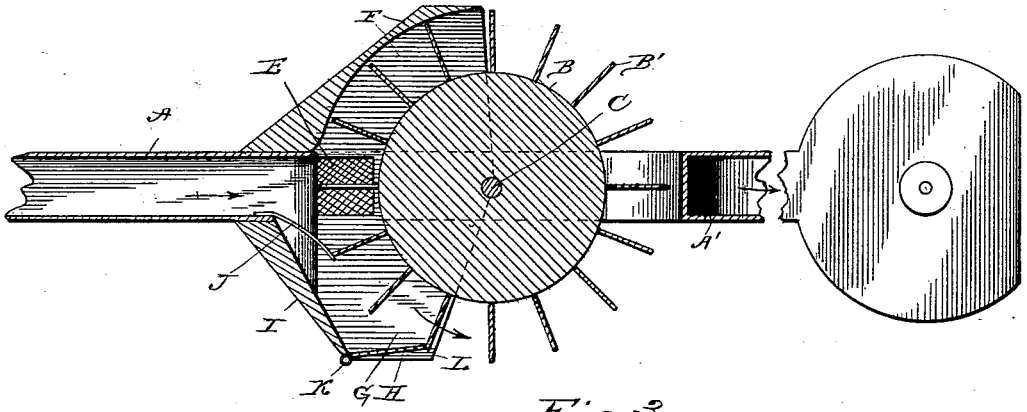
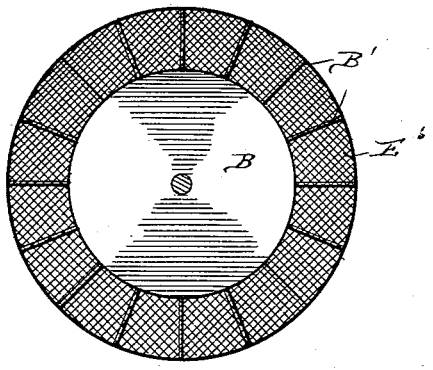


Fig. 3.



Witnesses
H. S. Rohrer
Thos. Dwyer

Inventor
William E. Elam
By his Attorneys
Lawson, Wilkes & Evans

UNITED STATES PATENT OFFICE.

WILLIAM E. ELAM, OF DALLAS, TEXAS, ASSIGNOR OF TWO-THIRDS TO R. S. THOMAS AND S. W. HARDWICK.

COTTON CONVEYING AND CLEANING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 423,040, dated March 11, 1890.

Application filed May 8, 1889. Serial No. 309,977. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM E. ELAM, a resident of Dallas, in the county of Dallas and State of Texas, have invented certain new and useful Improvements in Cotton Conveying and Cleaning Apparatus; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

The invention is fully shown in the accompanying drawings, in which—

Figure 1 is a plan of the apparatus. Fig. 2 is a section on the line *x x*, Fig. 1. Fig. 3 illustrates a modification in construction.

The object of the invention is to provide improved means for conveying seed-cotton and for freeing it from dust while in the conveying apparatus.

The apparatus consists of a pneumatic conveying-tube A, having a short section removed, and the two parts thus formed connected by lateral branch tubes A′ in the same horizontal plane, screens E across the entrance to each branch tube, a revolving cylinder B, mounted between the branch tubes and provided with wings B′ for carrying the cotton collected at the screens laterally out of the apparatus, means for reducing to a minimum the influx of air at points other than the mouth of the tube A, and a fan at A″ for creating a current of air through the tube toward the fan.

The cylinder B is mounted upon a shaft C, passing through the tubes A′ and driven from any convenient source of power by a belt passing over a pulley D. Its wings are radial and equal in length to the cylinder, and the whole is so placed that one side of the cylinder and the wings thereon are always within the enlarged closely-fitting mouth F G I of one segment of the tube A, the wings B′ sweeping in succession across the faces of the screens E, covering the entrances to the tubes A′. Above the screens the wings closely fit the entire interior surface of the mouth, and as the construction is such that there are at all times several of these wings within the space air is excluded upon this side. Below the screens the wings fit the space between the lateral walls only, and the space beyond their end margins is normally closed by a flexible valve J during the greater part of the time the wheel is in motion. Below the valve J is a swinging gate H, that normally closes the entire space outside the path of the wings B′. It yields readily when pressed outward, but by the action of a spring-hinge K, or its equivalent, always tends to return to its original position. Now, since the wings pass rapidly in succession in the direction of the arrow of Fig. 2, the air is effectually prevented from entering upon this side, although the passage may not be hermetically closed at all times.

Now, in operation both the fan and the cylinder are revolved at suitable speed, and if cotton be presented to the mouth of the conveyer it is taken up and carried forward in the tube A until it is arrested by the cylinder and the screens. The dust, however, is not stopped, but passes on through the screens, the tubes A′, and the fan, to be discharged at any desired point, usually without the gin-house, in which the apparatus is placed. Meantime the cotton is carried by the wings out of the apparatus at the point L and drops into such other devices as may be provided.

In the modification illustrated in Fig. 3 the screens E are omitted, and instead of them the annular segments E′, of wire-cloth or the like, are secured upon the lateral edges of the wings B′, to form with them peripheral cups upon the cylinder. The operation of the modified form is so closely analogous to that of the first form that no detailed description is thought necessary.

In either form the screens may consist of parallel bars instead of the netting shown, and the operation will be practically the same.

What I claim is—

1. In apparatus of the class described, the combination, with a pneumatic conveyer-tube having screens across its air-passages to arrest the cotton while allowing the dust to pass on with the air-current, of a suitably-mounted shaft, a series of radial wings borne by said shaft in position to sweep over said screens and across said passages, and means

for preventing undue influx of air in and around the path of said wings, substantially as set forth.

2. The combination, with the divided tube A and the rotating cylinder mounted in the plane of the tube and between its segments, of the radial wings fixed upon the cylinder, the branch tubes passing outside the cylinder and connecting the two segments, and the screens preventing cotton from passing into said branch tubes and causing it to accumulate in the path of said wings, substantially as set forth.

3. The combination, with the divided pneumatic tube and the fan for producing an air-current therein, of the branch tubes connecting the segments of the tube first named, the cotton-arresting screens, the enlarged mouth upon the tube-segment opposite the fan, the rotating cylinder mounted between said branches, the wings thereon completely filling, with the cylinder, the upper portion of the mouth and sweeping over the faces of the screens, the flexible valve, and the spring-actuated gate closing that part of the mouth beyond the path of said wings, substantially as and for the purpose set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

WILLIAM E. ELAM.

Witnesses:
ALLEN JOHNSON,
J. W. COON.