

BB

D. A. SAILOR.

APPARATUS FOR HANDLING COTTON.

No. 362,041.

Patented Apr. 26, 1887.

Fig. 1.

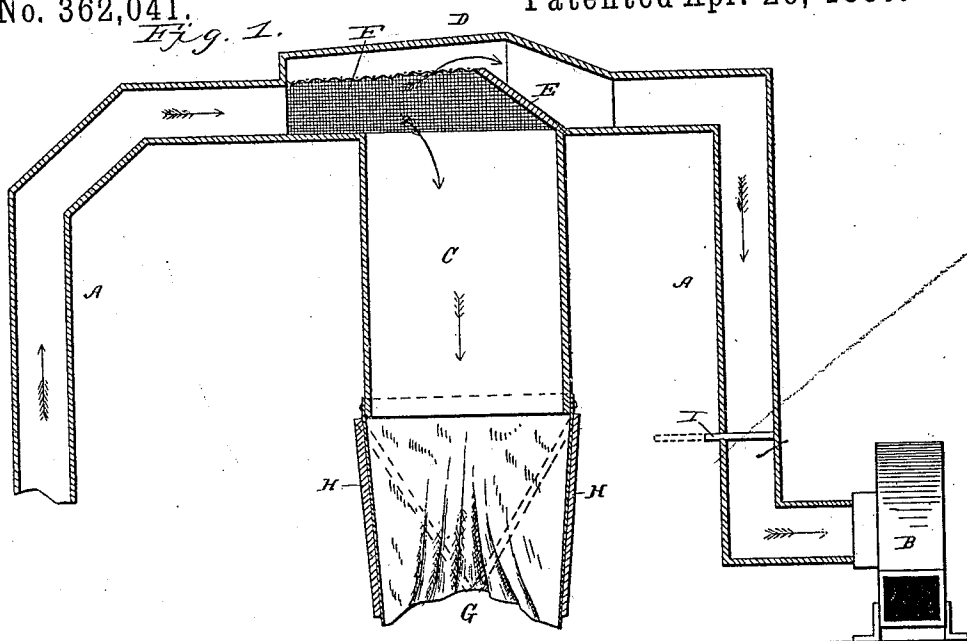


Fig. 2.

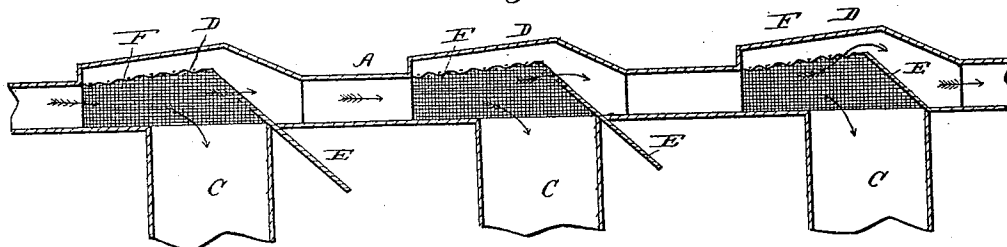
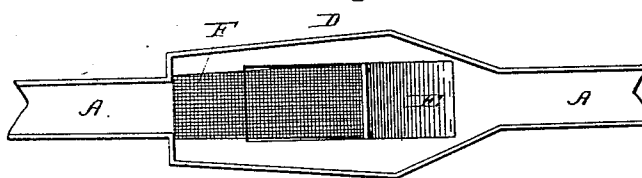


Fig. 3.



WITNESSES

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APPARATUS FOR HANDLING COTTON.

SPECIFICATION forming part of Letters Patent No. 362,041, dated April 26, 1887.

Application filed September 23, 1886. Serial No. 214,379. (No model.)

To all whom it may concern:

Be it known that I, DAVID A. SAILOR, a citizen of the United States, residing at Little Rock, in the county of Pulaski and State of Arkansas, have invented certain new and useful Improvements in Apparatus for Handling Cotton, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention relates to improvements in elevators and cleaners, more particularly to those designed for handling seed-cotton; and it has for its objects to convey the cotton from a source of supply to one or more points of deposit, at the same time separating from the cotton foreign matter, such as dirt, dust, or other impurities.

With these objects in view the invention consists of a pneumatic elevator provided with an automatic valve for receiving and discharging the cleaned material, and a cut-off, which may also be automatic, for controlling the said valve.

The invention also consists in connecting with the elevator two or more valves, with means for controlling the quantity of cleaned material delivered to each valve, or entirely cutting off the said supply from any one or more of the said valves without affecting the other valves.

30 One means for carrying out my invention that I have found advantageous I have illustrated in the annexed drawings, in which—

Figure 1 is a vertical section of an elevator embodying my invention. Fig. 2 is a similar view showing one means I employ to provide several points of deposit. Fig. 3 is a plan of a portion of Fig. 1 with the top removed.

The pneumatic elevator-tube is designated by A; the exhausting apparatus, which in the instance shown is a fan, by the letter B.

40 A box, C, which I call the "cotton-box," for receiving the cleaned cotton, is located at some point in the elevator-tube, preferably as shown, and communicates at its upper end with the said tube, which is enlarged on each side of the said box to form a separating-chamber, D—that is, the chamber is wider and extends above the tube over the said box C. An inclined deflector, E, projects into the chamber D from a point adjacent to the rear of the box C, and

is so constructed as to be adjusted to close or leave partially open, or wholly open, the rear end of the screen F, which forms a continuation of the tube A into the chamber D, and is located over the box C.

From the lower end of the box C depends the valve G, which may consist of flexible material—such as canvas—stiffened on two of its opposite sides in any suitable manner—for instance, by boards H. At some point between the box C and the fan B, I locate the cut-off, which may consist of a slide, I, adjustable across the tube A. The fan exhausts the air from the tube A, thereby causing the cotton to pass into the said tube from the source of supply, which may, if desired, be a wagon. However, before the cotton passes into the tube the force of the exhaust causes the stiffened sides of the valve to approach, as shown in dotted lines in Fig. 1 of the drawings, thus closing the lower end of the cotton-box, the said valve being held in the said closed position by the exhaust, the flexible portions of the valve sealing it against the admission of air from without. The exhaust being in operation and the valve closed, as described, the cotton is carried through the tube until it reaches the screen and deflector, when the dirt and the like will pass through the screen and to any convenient point of exit from the flue, while the cleaned cotton will fall into the receiving-box and upon the valve and be there retained.

When it is desired to discharge the cleaned cotton, the cut-off is operated to close the passage through the tube, and thus stop the action of the exhaust without stopping the fan. When the draft is cut off, the air in the flue approaching the receiver rushes forward and out through the discharging-valves G, so as to blow or force out the cotton, which, if allowed to fall of its own weight, would require the cut-off to stand closed for a longer period than is desirable. Cotton being light requires this assistance in falling, in order to economize time. Then, while the air in the tube approaching the separator is losing its momentum by escaping through the receiver, the air in the tube between the receiver and the cut-off, having no means of escape and having attained a

high rate of speed by the action of the exhaust mechanism, will necessarily momentarily condense itself at the cut-off, and will again immediately react before coming to a rest, as is evident. This momentarily reverses the draft through the wire-cloth in such a manner as to blow off any lint and dust that may have lodged against the wire-cloth and effectually cleans it, and at the same time makes a second puff of air through the valves, and thereby assists in the discharge of the cotton. At this point the flue is opened and the vacuum created, as before.

It will be evident from the foregoing that the cut-off in the tube between the receiver and the exhaust mechanism is a very essential element of my invention, as upon it depends the immediate discharge of the cotton in the receiver and the effectual cleaning of the separating-cloth.

Without limiting myself to the exact construction and arrangement of parts shown, I claim—

1. In an apparatus for elevating cotton, the combination of a pneumatic tube or flue, an exhaust apparatus, a valved receiver connected to the tube between its mouth and the exhaust apparatus, a deflector in the tube over the receiver for directing the material into the same, an automatically opening and closing valve attached to the said receiver, and a cut-off in the tube entirely closing the same between the exhaust apparatus and the valved receiver, whereby the action of the exhaust apparatus upon the tube may be suddenly stopped and a reacting puff of air created in front of the cut-off to accelerate the movement of the discharging cotton, substantially as described.

2. The combination of a pneumatic tube or flue, an exhaust apparatus connected to the tube, a valved receiver communicating with the said tube between its mouth and the said exhaust apparatus, a screen and deflector adjacent to the said receiver, and a cut-off in the

tube between the exhaust apparatus and the receiver, whereby the action of the exhaust apparatus in the tube may be suddenly stopped and a reacting puff of air created in the tube in front of the cut-off to accelerate the discharge of the material in the receiver and clean the screen over the same, substantially as described.

3. In an apparatus for elevating cotton and other materials, the combination of the pneumatic tube or flue, a receiver connected therewith, a valve attached to the said receiver and constructed of flexible material, and stiffening devices for the said valve, substantially as and for the purposes described.

4. In an apparatus for elevating cotton and other materials, the combination of a pneumatic elevating tube or flue, a receiver connected to the said tube, and a valve attached to the said receiver, constructed of flexible material, and having stiffened sides and flexible sides, substantially as herein shown and described.

5. In an apparatus for elevating cotton and other materials, the combination of the pneumatic tube or flue, a receiver connected to the said flue, a deflector adjacent to the said receiver, a screen adjacent to the deflector, and a flexible valve having suitable stiffening devices attached to the said receiver, substantially as described.

6. The improved cleaning apparatus consisting of an elevator-tube, a receiver connecting therewith, a flexible valved discharge-opening to the receiver, an adjustable deflector adjacent to the screen, and means, substantially as described, for operating the said discharge-opening to the receiver, all combined as and for the purpose specified.

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

DAVID A. SAILOR.

Witnesses:

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P. H. BERNAYS.