J. T. DONOVAN.
Cotton-Condenser.

No. 210,678. Patented Dec. 10, 1878.

Fig. 1.

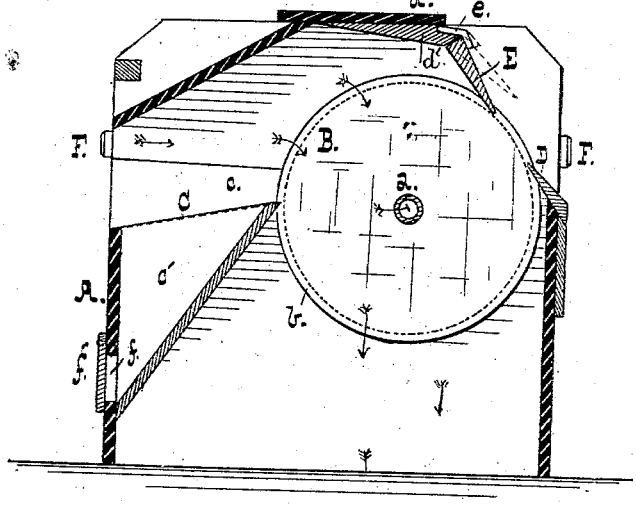
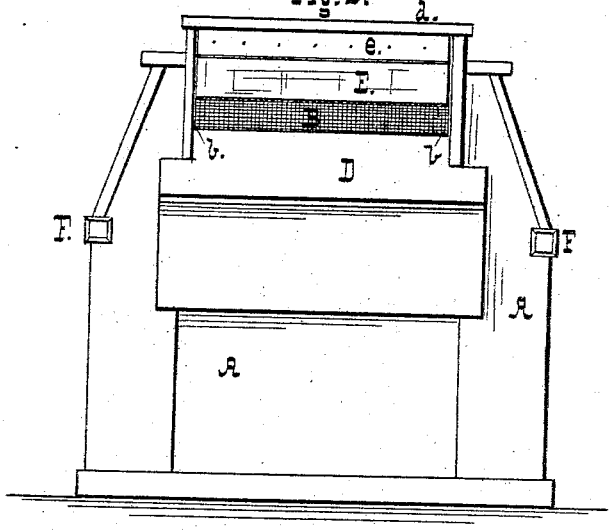


Fig. 2.



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UNITED STATES PATENT OFFICE.

JOHN T. DONOVAN, OF WACO, TEXAS.

IMPROVEMENT IN COTTON-CONDENSERS.

Specification forming part of Letters Patent No. **210,678**, dated December 10, 1878; application filed November 5, 1878.

To all whom it may concern:

Be it known that I, JOHN T. DONOVAN, of Waco, McLennan county, State of Texas, have invented certain new and useful Improvements in Cotton-Cleaners; and I hereby declare the same to be fully, clearly, and exactly described as follows, reference being had to the accompanying drawings, in which—

Figure 1 is a vertical longitudinal sectional view of the device, and Fig. 2 is an end elevation of the same.

My present invention relates to that class of devices in use for eliminating from cotton the sticks, sand, fragments of leaves, and trash generally with which the lint is more or less contaminated as it comes from the gin; and it consists in certain improvements upon the combined cleaner and condenser described and shown in Letters Patent of the United States No. 197,617, granted to me November 27, 1877.

In order that the scope of my present invention may be clearly apprehended without a necessary reference to the aforesaid Letters Patent, I will here describe briefly the construction and operation of the patented machine. It consists of a casing containing a revolving cylindrical screen of fine mesh, through which a strong draft of air is drawn, and over which the lint is led from the gin. Before reaching the revolving screen the lint is led over a stationary screen of coarse mesh, adapted to pass the larger and coarser portions of dirt and trash in the cotton. No draft is induced through the coarse screen, as it is made of such large mesh as to pass the lint also were a current of air drawn through it as the cotton passes over it.

From the revolving screen the lint is passed through a series of compressing-rollers, and is delivered from the machine in the form of an endless bat.

So far as the cleaning operation is concerned the patented machine is unexceptionable; but the compressing-rollers were liable to become clogged at the bearings with the lint, and sometimes the bat, instead of passing the rollers, would wrap around them.

It would not do to remove the rollers entirely, as free access for the air would thereby be admitted to the machine, and would pass directly through the screen instead of through the lint; besides, an opening of fixed size will not answer at the exit end of the device, by reason of the varying thickness of the bat of lint.

The substitute for the rollers shown in the accompanying drawings, and about to be described as constituting the gist of my present invention, answers every requisite. It holds the bat closely against the screen until delivered from the machine, while readily yielding to varying thicknesses of lint. While the said device—to wit, the flap E—is the salient feature of my present invention, the latter is by no means confined thereto, as will presently appear.

In the drawings, A represents the main casing, within which is mounted the cylindrical fine screen B and flat stationary coarse screen C. The latter is held in place by the wedge-shaped pieces *c*, which being removed the screen C may be taken out and a finer or coarser one substituted therefor.

The casing above the screen B steadily and uniformly approaches it, forming between them a tapering space, the function of which will be more fully set forth in the description of the operation of the device.

Below the stationary screen is the box *c'*, having an opening, *f*, through the main casing, normally closed by means of a flap or door, *f'*. Suitable brace-beams F F secure the parts of the casing together.

The top board, *d*, is made removable to afford access to the interior of the machine, and to its under side is secured the piece *d'*, adapted to form, in conjunction with the screen B, the tapering passage above referred to. To the end of the board *d'* is secured, by means of a leather or rubber hinge, *e*, to prevent leakage of air, the flap E, which normally rests upon the screen B, as shown. Below it, and attached to the main casing, is an inclined board, D, having a sharp edge nearly in contact with the screen, being placed, in fact, as close to it as may be.

The screen has its extremities flanged, as shown at *b*, in order to prevent the lint from being drawn between it and the casing, and to prevent access of air.

The operation of the device is as follows: The lint being led from the gin over the screen

C, the drum-sieve B is caused to revolve, and a current of air is induced through it by means of a blower or other air exhausting or forcing device in the direction shown by the arrows.

The shaft *a* may be made tubular, and the air may be drawn through perforations in it within the drum, or else through the bottom of the machine, which is placed over a hole in the floor.

The coarse trash falls through the sieve C into the box *c'*, while the lint passes over the drum and between it and the piece *d'*. The bat as it meets the drum is light and loose and full of fine dirt, which is blown from it and into the screen. As the bat approaches the flap E it becomes more and more compacted by its passage through the tapering opening, and when it reaches the opening between the flap E and board D is practically free from dirt, and sufficiently dense to prevent the passage of air through it to any great extent.

What I claim is—

1. In combination with the screen B and casing A, the flap E, substantially as described.

2. In combination with the casing A and screens C and B, the flap E, as set forth.

3. In combination with the screen B, the tapering passage, as set forth, and the flap E and piece D, substantially as described.

J. T. DONOVAN.

Witnesses:
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