F. E. SMITH.

COTTON CLEANER AND CONDENSER.

No. 192,134. Patented June 19, 1877.

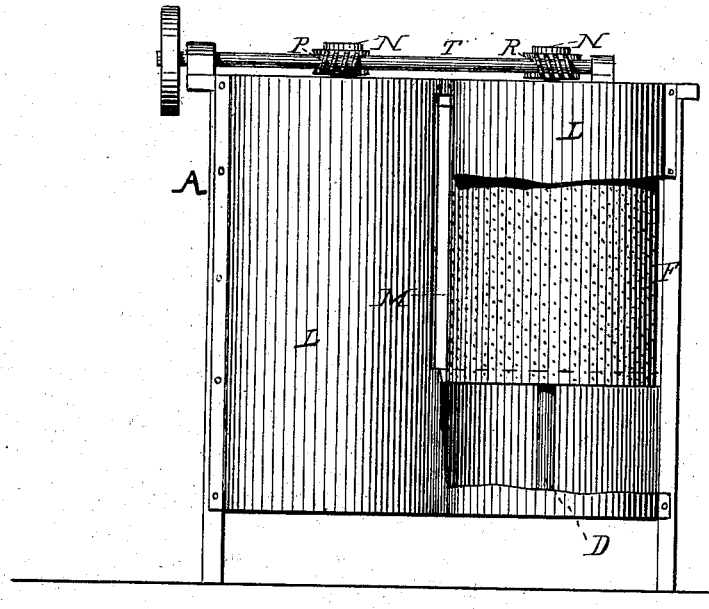

Fig. 1

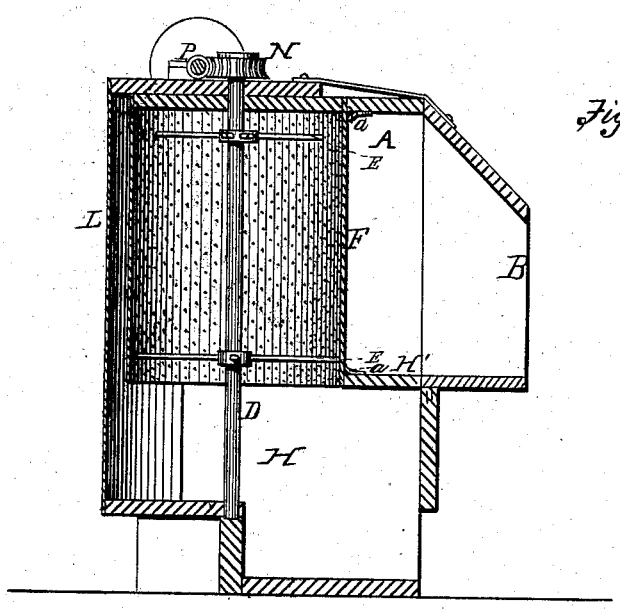

Fig. 2.

Witnesses
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FERDINAND E. SMITH, OF PRATTSVILLE, ALABAMA.

IMPROVEMENT IN COTTON CLEANERS AND CONDENSERS.

Specification forming part of Letters Patent No. **192,134**, dated June 19, 1877; application filed March 9, 1877.

To all whom it may concern:

Be it known that I, FERDINAND E. SMITH, of Prattsville, in the county of Autauga and State of Alabama, have invented a new and useful Improvement in Cotton Cleaners and Condensers, of which the following is a specification, reference being had to the accompanying drawings.

The invention relates to an improvement in cotton cleaners or condensers; and consists in the mechanism hereinafter specifically described, the object being to provide a suitable means for cleaning and condensing cotton.

Figure 1 is a rear view of a device embodying the elements of the invention. Fig. 2 is a vertical transverse section through one of the cylinders.

In the accompanying drawings, A represents the frame, provided on its front upper portion with the flue B, extending horizontally across the device, and which connects the condenser with the cotton-gin. At suitable points in the frame A are firmly secured, in a perpendicular or slanting position, the axles D, provided on their upper portion with the radiating arms E, by which the perforated cylinders F are sustained.

The upper ends or heads of the cylinders F are of solid material, while the sides of same are of gauze-wire or perforated zinc, or other suitable material, and the bottom left entirely open to permit the precipitation of trash or dirt to the air-chamber H, wherefrom it is carried off by the blast passing downward through the flue B and cylinders F.

About the transverse center of the frame, and near the base of the cylinders, is furnished the floor or platform H′, to prevent the cotton lint from falling below the air-chamber H and being carried off with the trash.

Upon the rear of the frame A is secured the casing L, the contour of which conforms to the sides of, and is placed in juxtaposition to the rear portion of, the cylinders F, which are separated a proper distance to allow the cotton to pass between them in a bat.

Immediately in the rear of the space between the cylinders the casing L is furnished with the slot M, through which the bat of cotton is ejected from the condenser.

The upper ends of the axles D are provided with the gear-wheels N, the teeth of which mesh with the right and left worms P R, secured upon the shaft T, to the band-wheel upon the end of which power may be applied.

It is obvious that by having the right and left worms the cylinders may be rotated in opposite directions—that is, rotated toward each other—thereby conveying the cotton to the space between them, and compressing and expelling it through the slot M.

Operation: The cotton is carried from the gin by the blast caused by the rapid revolution of the brush-cylinder, which takes the cotton from the gin-saws through the flue B to and against nearly the entire front half of the cylinders. This blast also forces the trash and fine dirt through the perforations or open-work in the cylinders, and precipitates it to the air-chamber H, from which it is blown off by the same blast that entered the flue B, the mouth of the air-chamber being its means of exit. In the meanwhile the cotton which has now been cleared of trash adheres to the cylinders, being pressed between them, and is gradually discharged through them in a sheet or bat.

It is obvious that, by having the casing L in juxtaposition to, and conforming with, the cylinders, the blast is concentrated and made more effective in expelling foreign matter.

It is also obvious that by having the cylinders open below they can be readily cleared of dirt, and are thereby prevented from becoming foul, and that, by means of the packing *a*, secured to the frame and bearing against the upper and lower and outside edges of the cylinders, the cotton lint is prevented from escaping and falling below to the air-chamber.

If preferred, a means can be attached to the mouth of the air-chamber for conveying the trash and dirt away from the condenser.

I do not claim a condenser having horizontal cylinders, as I am aware that they have long been known; but

What I do claim as my invention, and desire to secure by Letters Patent, is—

1. A cotton-condenser provided with upright perforated cylinders, closed above and open below, substantially as set forth.

2. In a cotton-condenser, the casing L, which

covers the entire rear superficies of, and conforms to, the cylinders, and is provided with the slot M, substantially as set forth.

3. The combination of the flue B, upright cylinders F, and air-chamber H, substantially as shown and described.

In testimony that I claim the foregoing improvement in cotton cleaners and condensers, as above described, I have hereunto set my hand.

FERDINAND ELLIS SMITH.

Witnesses:

M. E. PRATT,

J. W. MATHEWS.