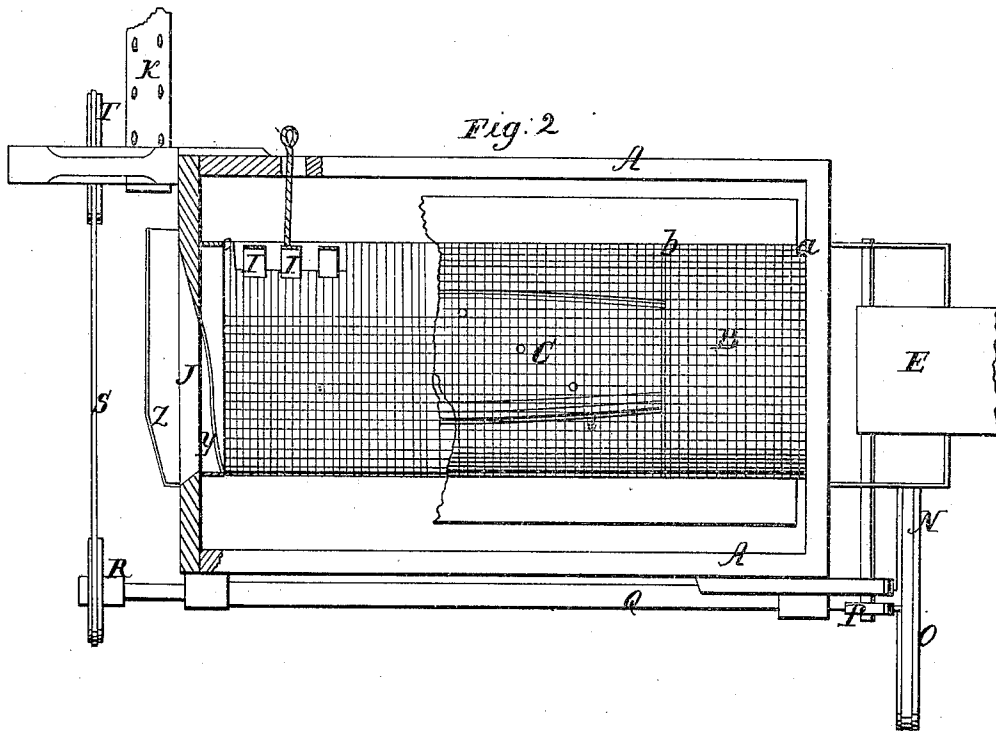
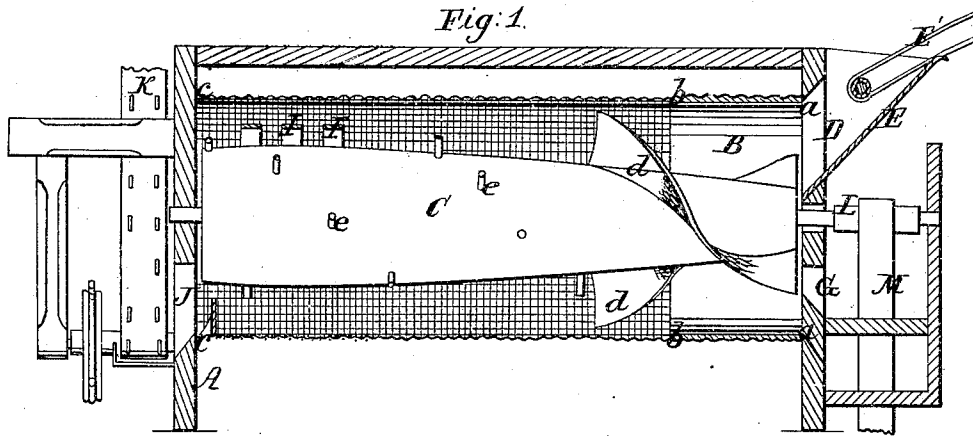


C. SMITH.
COTTON CLEANER.

No. 30,003.

Patented Sept. 11, 1860.



Witnesses;
Gordon B. Alder
R. W. Fenwick

Inventor;
Charles Smith
by Munnell
Attorneys.

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Fig. 3.

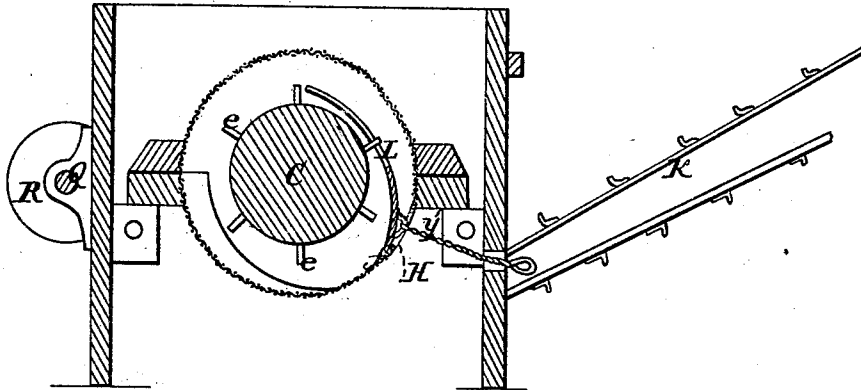
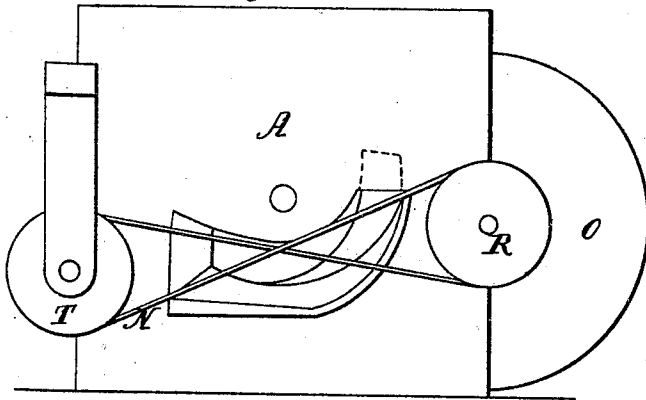


Fig. 4.



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UNITED STATES PATENT OFFICE.

CHARLES SMITH, OF KNOXVILLE, TEXAS.

COTTON-CLEANER.

Specification of Letters Patent No. 30,003, dated September 11, 1860.

To all whom it may concern:

Be it known that I, CHARLES SMITH, of Knoxville, in the county of Cherokee and State of Texas, have invented a new and useful Improvement in Cleaning Cotton; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1, is a vertical longitudinal section of my improved cotton cleaner. Fig. 2, is a top view and partial section of the same. Fig. 3, is a vertical transverse section, and Fig. 4, an end view of the same.

Similar letters of reference, in each of the several figures indicate corresponding parts.

The nature of my invention consists, 1st, in the employment of a conical shaft provided with spiral fans at one of its ends and with teeth set in spiral lines around its circumference and along the remainder of its length, in combination with a cylinder constructed for a portion of its length of wire-work and of sheet metal and an exterior case which is constructed with an air supply passage and a peculiar cotton discharge passage, as and for the purposes hereinafter stated.

My invention consists, 2nd, in providing a passage in the circumference and near the discharge end of the interior wire gauze cylinder and arranging a slotted valve between the same and the conical cylinder, as and for the purposes hereinafter stated.

To enable others, skilled in the art, to make and use my invention, I will proceed to describe its construction and operation.

A, represents a casing or framing of box form, closed in at top, sides and ends, but left open at its bottom. Within this casing an open ended cylinder B, is placed so that a space exists all around between the interior of the casing and the exterior of the cylinder. This cylinder is formed of sheet metal from its front end *a*, to *b*, and of wire work from *b*, to its rear end *c*, as shown.

Within the cylinder B, a conical revolving shaft C, is placed centrally, said shaft having its bearings in the ends of the casing A. The front portion of this shaft is furnished with two spiral fan blades *d*, *d*, and the remaining portion set with teeth or pins *e*, *e*, which are arranged spirally thereon.

D, is a cotton feed passage in the front end of the outer casing and above the axis

of the shaft. This passage has a spout E, extending out from it, and passing under an inclined belt E' which conducts the cotton from the "seed cotton room" to the cleaning machine.

G, is a draft or air supply passage to the fan blades. This passage is formed in the front end of the outer case and is situated below the axis of the beating shaft C.

H, is a passage in the circumference of the cylinder B. This passage is situated near the discharge end of the cylinder.

I, is a partially slotted and partially solid valve hinged on a pivot *f*, to the inner side of the gauze cylinder so as to come between the beating cylinder C. This valve is furnished with an adjusting bar *g*¹, which extends through the casing A. This bar in practice, may have a spring catch or adjusting notches formed on it so that the valve may be adjusted and retained at positions nearer to or farther from the toothed shaft C. The valve should be so set that its slots will come in line with the pins of the shaft and thus when the valve is adjusted close to the shaft the pins of the shaft shall have a chance to move through the slots of the valve and thus no obstruction be offered to the revolution of the shaft and the cylinder B, and directly opposite the passage H, as shown.

J, is a discharge passage of curved form in the rear end of the outer case. This passage has a spiral chute *g*, arranged partially around it on the inner side of the end of the case and a similar one *z*, on the outer side of the end of the case. The inner and outer passage are of about the same form and one receives the cotton from the beating shaft and conveys it through the passage into the other.

k, is an endless elevating belt for receiving the cotton from the outer chute and conveying it to the cotton gin.

L, M, N, O, P, Q, R, S, T, represent the gearing by which the whole machine is operated.

From the foregoing description, it will be seen that if the machine is set in motion and cotton introduced at the feed passage, the spiral fan blades in their revolution will cause it to be sucked or drawn into the cylinder B, and as soon as this takes place it will be taken hold of by the blades and carried around and forward till it arrives at the pins of the beating shaft, and by said pins will

be revolved and lightened up until it arrives at the discharge end of the cylinder B. In its passage, the fan blades blow a strong current of air through it and thus free it from all impurities; the smaller particles of dust &c. escaping through the meshes of cylinder B, while stones or large sticks pass out through the slots of the valve and escape through the passage H.

10 The cotton thus cleaned passes on the inner chute being forced by the pins of the shaft and the blast of the fan blades, is conducted through the escape passage on the outer chute and from this latter onto the elevator.

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

1. The employment of a conical shaft C, provided with spiral fans *d, d*, at one of its ends, and with teeth *e*, set in spiral lines
20 around its circumference and along the re-

mainder of its length in combination with a cylinder B, surrounding the same constructed partly of wire work and partly of sheet metal and an exterior case A, which is constructed with an air supply passage G, 25 and a cotton discharge passage J, *y, z*, substantially as and for the purposes set forth.

2. The combination of the passage H, in the circumference and near the discharge end of the interior wire gauze cylinder with 30 the slotted hinged valve *f*, substantially as and for the purposes set forth.

The above specification of my improvement in cotton cleaning machines signed by me this 26th day of May 1860.

CHARLES SMITH.

Witnesses:

GOODWIN Y. AT LEE,
ROBT. W. FENWICK.