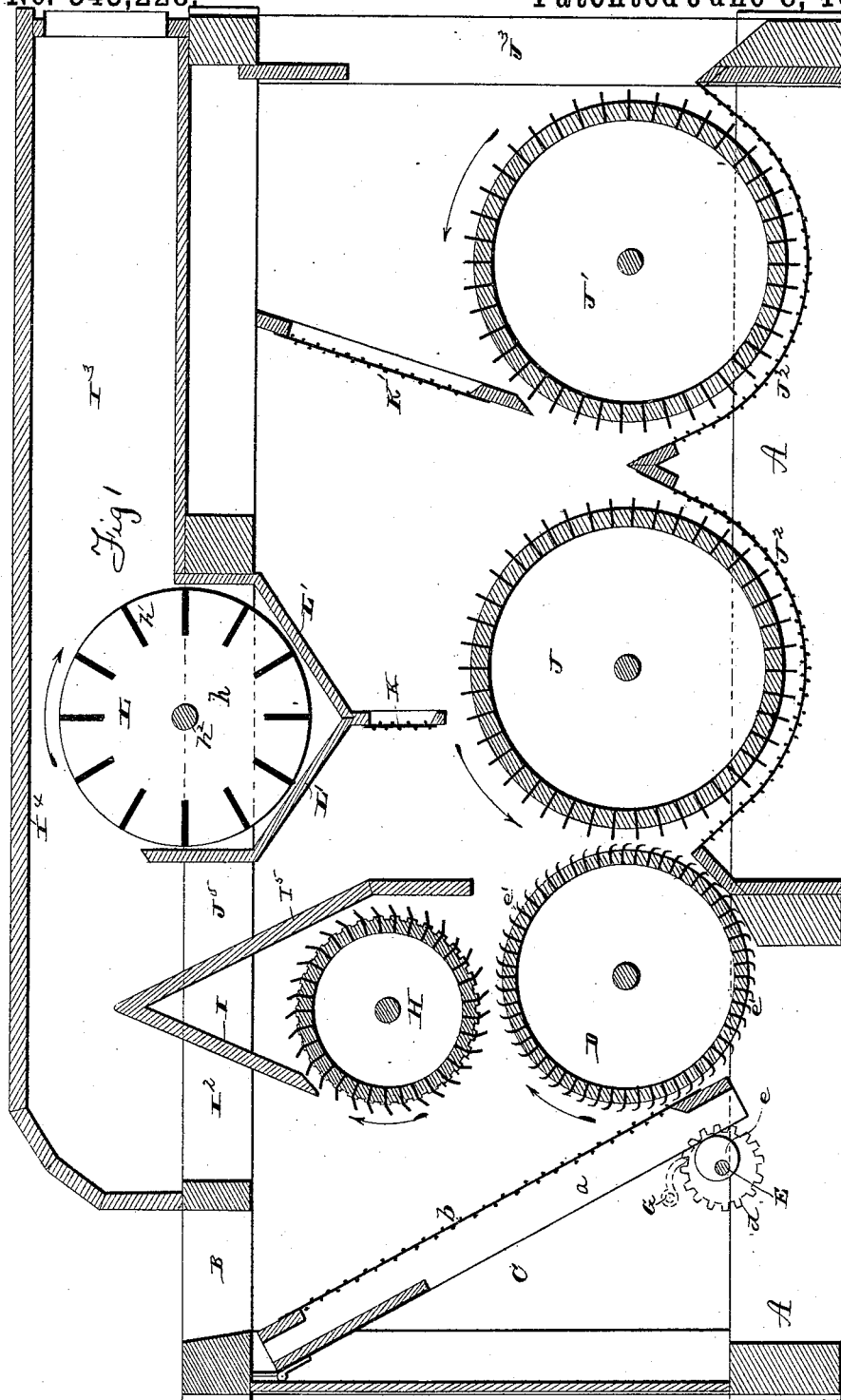


W. O. COLEMAN.
SEED COTTON CLEANER.

No. 343,228.

Patented June 8, 1886.



WITNESSES

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Geo. F. Downing.

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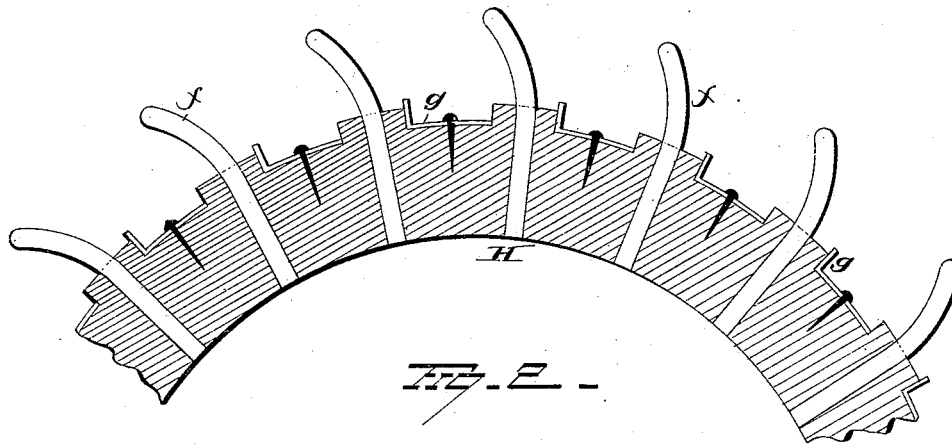
(No Model.)

2 Sheets—Sheet 2.

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UNITED STATES PATENT OFFICE.

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MRS. ELLA COLEMAN POOLE, OF CINCINNATI, OHIO.

SEED-COTTON CLEANER.

SPECIFICATION forming part of Letters Patent No. 343,228, dated June 8, 1886.

Application filed September 11, 1885. Serial No. 176,811. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM ORSBERN COLEMAN, of Grand Rapids, in the county of Kent and State of Michigan, have invented certain new and useful Improvements in Seed-Cotton Cleaners; 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 appertains to make and use the same.

My invention relates to an improvement in seed-cotton cleaners and separators, the object of the same being to provide an improved machine adapted particularly for cleaning and separating seed-cotton that has been roughly gathered, and which is mixed with bolls, hulls, twigs, and dirt; and it consists in the parts and combinations of parts, as will be more fully described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view in longitudinal vertical section of a machine embodying my invention. Fig. 2 shows an enlarged vertical section of the hulling-cylinder.

A represents the frame of the machine, of any desired size and material, provided at one end with the hopper B, into which the stock is fed to the machine. The stock or material as it is fed to the hopper falls onto the adjustable front board, C, consisting, essentially, of a series of strips, *a*, secured together and forming a frame and supporting the wire cloth or screen *b*, which is secured to said frame. The openings or meshes of the wire screen are sufficiently large to permit of a free passage of loose sand and dirt, but not large enough for the bolls with their adhering cotton to escape through. The front board, C, thus constructed, is hinged at its upper end to the frame of the machine, while the lower end thereof, which is free to be moved toward and away from the separating-cylinder D, rests on the eccentrics *e*, rigidly secured to the shaft E. This shaft passes transversely through the machine, and is provided at one end with a wheel having a series of cog-teeth, *d*, formed on its periphery, and with eccentrics *e*. The strips *a* rest on the eccentrics, and are consequently adjusted when the shaft is turned.

To the outside of the frame is pivoted a gravity latch or pawl, G, adapted to engage

the teeth *d* and hold the shaft and its attached eccentrics rigidly in position. By withdrawing the latch and turning the shaft the front board, C, can be moved nearer to or farther away from the separating-cylinder, as necessity demands.

The seed-cotton, with its adhering bolls, twigs, and dirt, falls down the inclined face of the front board, and a portion of the loose bolls and trash continue down and are discharged through the space between the lower end of the front board and the separating-cylinder, while the cotton is stopped by said cylinder and carried up thereon to the hulling-cylinder H.

The separating-cylinder D is situated near the lower end of the front board, and is provided with teeth *e'*, having sharp points and curved forwardly. These teeth readily take hold of the cotton fiber, but not the hulls, twigs, &c., and project only slightly out from the surface of the cylinder, and the curvature thereof is such that when the said cotton falls thereon some of the seeds engage the teeth, and are carried around with their adhering fiber without being knocked off by the hulling-cylinder, while the seed-cotton not in direct engagement with the teeth is knocked back onto the front board. Each cavity of a cotton-boll contains a lock having from six to twelve seeds of cotton firmly interlocked by the cotton fiber, and when the lock of cotton is thrown onto the separating-cylinder probably not more than one or two seeds thereof will be directly engaged with the teeth of the cylinder. The seed in direct engagement with the teeth will be carried past the hulling-cylinder, while the seed-cotton not in direct engagement with the teeth will be knocked backward, as before described.

The hulling cylinder H is situated directly over the separating-cylinder, and is provided with rows of spikes or teeth. This hulling-cylinder is provided with longitudinal grooves running throughout its entire length, into which are secured the angular metallic strips *g*. These strips project outwardly from the periphery of the cylinder, and assist the rearwardly-inclined teeth *f* in knocking back the bolls and the seed-cotton not in direct engagement with the teeth *e'* of the separating-cyl-

inder. The teeth f are so inclined as to prevent as far as possible the seed-cotton and trash from adhering thereto, but if any should, it is instantly knocked off by the draft-board 5 I, the lower end of which rests in close proximity to the teeth of the hulling-cylinder. This hulling-cylinder revolves in the direction shown, and knocks back the seed-cotton, as before described, which loosens the mass 10 and liberates the sand and other impurities contained in the mass. The lighter particles of foreign matter, instead of falling down and mixing with the seed-cotton on the separating cylinder or grating, are drawn upward through the draft-flue I^2 , formed by the draft-board I and front of the machine, and discharged through the flue I^3 . The draft-flue, after it passes the draft-board I, passes rearwardly to the end of the machine from which it discharges. The seed-cotton that adheres 20 to the teeth of the separating-cylinder is carried around to the stripping-cylinder J. This cylinder is provided with straight teeth arranged in circular rows around the periphery. The teeth of this cylinder occupy positions 25 opposite the spaces between the teeth of the separating-cylinder, and as the stripping-cylinder revolves faster than the separating-cylinder the seed-cotton is taken therefrom by 30 the stripping-cylinder and carried under said cylinder and thrown upward to the discharge-cylinder. The cylinder J rests over and in close proximity to the wire-cloth J^2 , the meshes of which are sufficiently large to permit any 35 dirt and trash still adhering to the seed-cotton to pass out from the machine. The wire-cloth is curved concentrically with said cylinder, and the seed-cotton, as it is stripped from the teeth of the separating-cylinder, is carried 40 over and in contact with the wire-cloth and thoroughly separated and loosened, and thrown upwardly and rearwardly to the discharge-cylinder. Some of the seed-cotton is carried by the teeth of the stripping-cylinder, and, instead of being thrown rearwardly, is carried 45 past the center and thrown forwardly against the vertical screen K, which latter depends from the fan-casing. This screen terminates just above the stripping-cylinder, and besides 50 forming a stop for the seed-cotton thrown up by the stripping-cylinder also prevents the particles of loose cotton from being drawn up into the draft-flue J^3 by the draft of the fan. The cotton striking against the screen K, falls 55 back onto the stripping-cylinder, where it is again mixed with the cotton as it leaves the separating-cylinder. The loose cotton carried up by the stripping-cylinder is thrown by centrifugal force upwardly against the inclined screen K' , located over the discharge-cylinder. 60 The cotton, as it is thrown up by the stripping-cylinder, is in a loose condition, which permits the current of air created by the fan as it passes through the screen K' to pass through the loose cotton and relieve it of 65 its dust. The dust thus separated from the cotton is drawn by the air-current through

the screen K, and forced out through the air-flue I^3 , formed between the board I' and the top of main frame-work.

The boards I and I^3 are joined at their tops, forming a hood or cover for the hulling-cylinder, which prevents the latter from creating a counter-current. 70

The cotton-seed thrown by the stripping-cylinder onto the screen K' slides down the latter and falls onto the wire-cloth J^2 , located under the discharge-cylinder J' and concentric therewith. The cotton is carried by the teeth of the cylinder J' over the wire-cloth J^2 , 80 where it is further agitated, and finally discharged in a clean condition out of the discharge-opening J^3 .

The fan L is located in rear of the flue J^5 , and is partly inclosed by the casing L' . This 85 fan consists of two or more circular heads, h , rigidly secured to a shaft, h^2 , and wooden or metallic strips h' , secured in recesses formed in the peripheries of the disks. The strips are sufficiently wide to create the necessary draft. 90

The screens J^2 are secured to the machine by means of screws, and can be removed at any time desired.

This invention is simple in construction, is durable in use, and thoroughly separates the 95 seed-cotton and frees it from all foreign substances.

It is evident that numerous slight changes may be made in the construction and relative arrangement of parts without departing from 100 the spirit of my invention; hence I would have it understood that I do not confine myself strictly to the parts herein described, but consider myself at liberty to make such changes and alterations as fairly fall within the spirit 105 and scope of my invention.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with a separating-cylinder and a hulling-cylinder located over the same, of a hood located over and partly embracing the hulling-cylinder, the air-flue I^2 , and a fan for creating an upward draft through said flue, substantially as set forth. 110 115

2. The combination, with a separating-cylinder, a hulling-cylinder, a stripping-cylinder, flue I^3 , and a fan, of a screen located above the stripping-cylinder and behind the mouth of the flue I^3 , substantially as set forth. 120

3. The combination, with a separating-cylinder, a hulling-cylinder located above the separating-cylinder, and a stripping-cylinder, of an air-flue, I^3 , a fan-casing and fan, the screen located below the stripping-cylinder, 125 and the screen K, depending from the fan-casing, the parts being arranged substantially as described.

4. The combination, with a hulling-cylinder, a hood, a separating-cylinder, a stripping-cylinder, and the screen J^2 , of a fan, L, and the screen K. 130

5. The combination, with a stripping-cylinder, a discharge-cylinder, and an air-flue, I^3 ,

of a screen located between the stripping-cylinder and air-flue, and a screen located over the discharge-cylinder, substantially as set forth.

5 6. The combination, with the stripping and discharge cylinders and the screens J², of the inclined screen K', located above the discharge-cylinder.

10 7. The combination, with the stripping and discharge cylinders, the screens J², and a fan, of the screen K', located above the discharge-cylinder.

8. The combination, with the stripping and discharge cylinders, screens J², and a fan, of the screens K' and K, as described. 15

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

WILLIAM ORSBERN COLEMAN.

Witnesses:

GEO. HOLBROOK,
HENRY F. MAY.