

(No Model.)

3 Sheets—Sheet 1.

J. J. FAULKNER.
COTTON SEED DELINTER.

No. 546,271.

Patented Sept. 10, 1895.

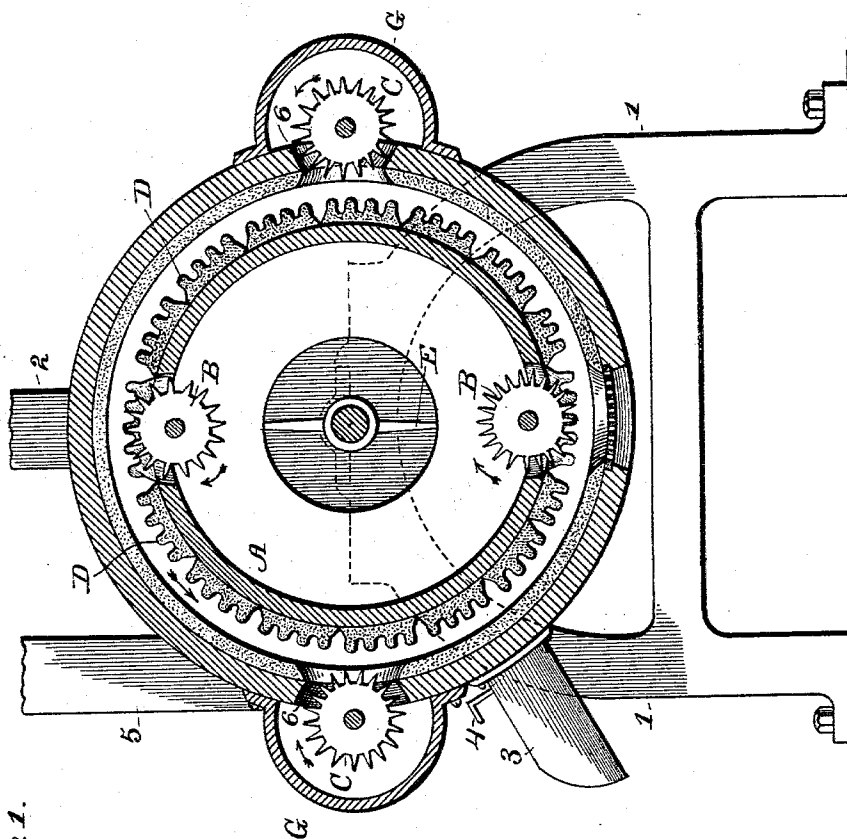


Fig. 1.

Witnesses

Victor J. Evans.

Mary Wilson

Inventor

James J. Faulkner

by E. M. Marble & Son

Attorneys

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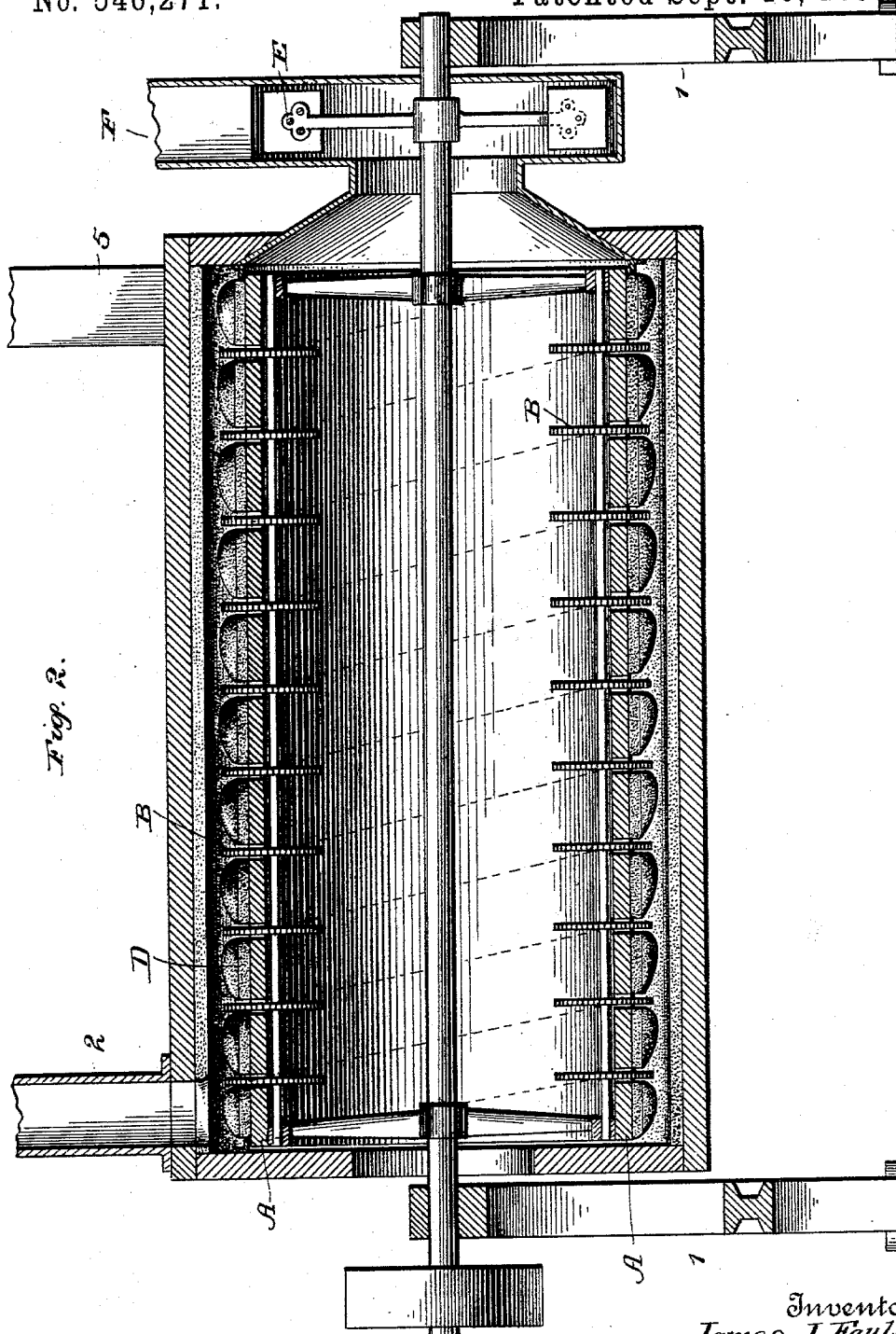


Fig. 2.

Witnesses
Victor J. Evans.
Marie Wilson

Inventor
James J. Faulkner.

by E. M. Marble & Sons
Attorneys

(No Model.)

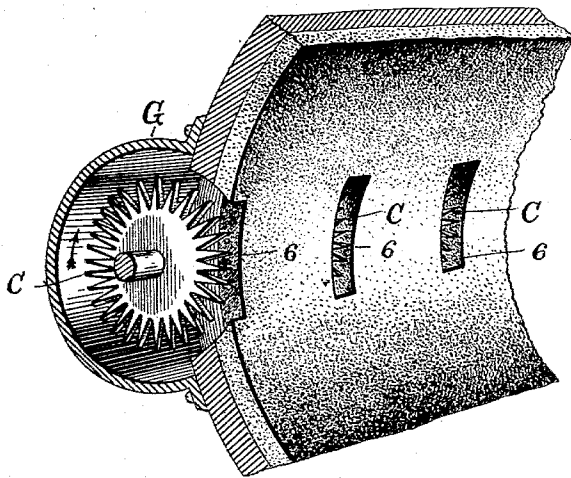
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Fig. 3.



Witnesses
Victor J. Evans.
Marie Wilson

Inventor
James J. Faulkner.
By *E. M. Mark Lone.*
Attorneys

UNITED STATES PATENT OFFICE.

JAMES J. FAULKNER, OF MEMPHIS, TENNESSEE, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO THE STANDARD COTTON SEED COMPANY, OF ARKANSAS.

COTTON-SEED DELINTER.

SPECIFICATION forming part of Letters Patent No. 546,271, dated September 10, 1895.

Application filed June 3, 1895. Serial No. 551,558. (No model.)

To all whom it may concern:

Be it known that I, JAMES J. FAULKNER, a citizen of the United States, residing at Memphis, in the county of Shelby and State of Tennessee, have invented certain new and useful Improvements in Cotton-Seed Delinters; 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 improvements in machines for treating cotton-seed, and particularly to improvements in that class thereof known as "delinters;" and it consists in the improved cotton-seed delinter, whose construction and arrangement of parts will be hereinafter fully described, and particularly pointed out in the claims.

One object of my invention is to provide a machine wherein not only will I be enabled to remove the lint separated from the seed by the action of the machine interiorly through the delinting-cylinder, but also be able to remove a portion of said lint exteriorly through the delinting-cylinder casing in the ordinary manner. Theoretically, as well as practically, the most advantageous point at which to effect the removal of the lint separated by the action of the delinter is from the interior of the roll which the seed forms around the delinting-cylinder. The force imparted to the seed by the centrifugal motion of the same is so great as to throw the seed against the delinting-cylinder casing in the form of a roll. The lint being lighter than the seed, while also subject to the same centrifugal movement, remains on the inside of the roll thus formed and can be readily removed through the interior of the delinting-cylinder. In fact, the removal of the lint can take place much more easily at this point than by the common way of breaking the roll which the seed forms and drawing the lint out through the delinting-cylinder casing.

The advantage of using means to withdraw the lint from the exterior of the casing at the same time as it is being withdrawn through the interior of the casing is of course very great, as by the conjoint action of these two means the complete and instantaneous re-

moval of the lint, separated by the action of the machine, is secured.

The machine which I have constructed to accomplish the objects of my invention makes use of a delinter-cylinder with one or more series of spaced apertures in its surface, through which project the peripheries of toothed disks journaled within the delinting-cylinder in suitable bearings. A central air-draft is used to free the teeth of these disks from the lint which they gather in the course of their action, and thus keep them continually clean and free from lint.

Longitudinal apertures in the delinting-cylinder casing permit the journaling in intimate relation with the abrading-surfaces of a similar series of toothed disks. These disks are suitably spaced, so that the removal of the seed with the lint is impossible. In this case, also, an air-draft is used to remove the lint from the disks, so as to keep their surfaces clean.

In this machine I rely upon the movement of the delinting-cylinder relative to that of the body of seed under treatment to actuate the toothed lint-removing disks, as I have found that the disks are caused to move with sufficient rapidity to perform their function when thus actuated; but of course I may drive the disks by separate power means if I so desire.

My invention is fully illustrated in the drawings which accompany and form a part of this application, in which the same reference letters and numerals refer to the same or corresponding parts, in which—

Figure 1 is a cross-section of my machine, showing the relation the abrading-surfaces bear to each other, and also showing the position and arrangement of the toothed lint-removing disks. Fig. 2 is a central longitudinal section of the delinting-cylinder, showing the seed feed and discharge openings. Fig. 3 is a similar view of a portion of the delinting-cylinder casing.

Referring to the drawings, 1 represents the machine-frame. In this frame are supported in suitable bearings the delinting-cylinder A, the toothed disks B, which are journaled in the interior of the delinting-cylinder and

the toothed disks C, which are journaled on the exterior of the delinting-cylinder casing. The seed is fed into the machine through the inlet opening 2, is fed between the abrading-surfaces by reason of the spiral arrangement of the abrading-blocks D, on the delinting-cylinder and is discharged through the discharge-opening 3, said opening being controlled by a valve 4. A discharge stand-pipe 5 controls and governs the operation of the machine. The abrading action of the machine takes place between the abrading-blocks D on the delinting-cylinder and the smooth abrading-surface of the delinting-cylinder casing, both abrading-surfaces being formed preferably of emery.

The toothed disks B, which are journaled in the interior of the delinting-cylinder and project through apertures formed therein, are provided with spur-teeth, so that they will not tend in their action to draw any seed through the interior of the delinting-cylinder, but will simply serve to remove the lint. The toothed disks C on the exterior casing, which work through spacing-ribs 6, are similarly formed and serve simply to remove the lint which is separated by the action of the machine.

A fan E, which is journaled on the central shaft of the machine, produces a current of air which draws out of the delinting-cylinder the lint which the series of toothed disks bring into the same and keeps the teeth of these disks at all times free from lint. The lint thus removed is discharged through the lint-discharge flume F. The toothed disks C are also journaled in air-flumes G, so that their surfaces are kept clean and free from lint and the satisfactory removal of the lint, separated by the action of the machine, is insured.

This machine may be arranged either vertically or horizontally, as its construction permits either arrangement.

The operation of my machine is as follows: The seed is fed into the machine through the feed-inlet opening 2, and is fed through the machine by the spiral arrangement of the emery blocks formed on the delinting-cylinder. The force generated by the movement of the delinting-cylinder relative to that of the body of seed under treatment is sufficient to rotate the toothed lint-removing disks without the use of any additional power, and thus to cause the disks of themselves to rotate and withdraw the lint from the seed as rapidly as it is scoured off of the same by the action of the abrading-surfaces.

The seed is discharged through the discharge-opening 3, the discharge being regulated and controlled by the valve 4 and the stand-pipe 6. The lint, as rapidly as it is removed from the seed under treatment, is swept away by the air-current into the air-flumes F and G, and carried to the surface of a condenser-cylinder to be formed into a bat in the usual manner.

I do not herein claim the use of a stand-pipe to govern and regulate the condition of the seed under treatment, as that is claimed in an application filed by me May 4, 1895, Serial No. 548,146; nor do I claim, broadly, the use of a moving lint-removing device stationed in an air-flume and formed so as to permit free access of air to the abrading-surfaces therethrough, as this is claimed in an application filed by me May 20, 1895, Serial No. 549,980.

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

1. In a cotton seed delinter, the combination with two opposing abrading surfaces, one of which has a movement relative to the other, of seed inlet and discharge openings, and means, actuated by the movement of the moving abrading surfaces relative to the seed under treatment, for removing the lint separated by the action of the abrading surfaces, substantially as described.

2. In a cotton seed delinter, the combination with a delinting cylinder having apertures formed therein, and a casing therefor, of seed inlet and discharge openings, and automatically operating means, stationed in said aperture, for removing the lint separated by the action of the machine interiorly through the delinting-cylinder, substantially as described.

3. In a cotton seed delinter, the combination with a delinting cylinder having an aperture therein, and means for preventing the seed under treatment from falling out of the range of action thereof, of seed inlet and discharge openings and a moving lint removing device, stationed in said aperture substantially as described.

4. In a cotton seed delinter, the combination with a delinting cylinder having a series of apertures therein, and means for preventing the seed under treatment from falling out of the range of action thereof, of seed inlet and discharge openings, and disks, stationed in said apertures, for removing the lint separated by the action of the machine, substantially as described.

5. In a cotton seed delinter, the combination with a delinting cylinder, and means for preventing the seed under treatment from falling out of the range of action thereof, of seed inlet and discharge openings, openings in the delinting cylinder, and toothed disks journaled within said cylinder and having their peripheries projecting through said openings for removing the lint separated by the action of the machine, substantially as described.

6. In a cotton seed delinter, the combination with a delinting cylinder, and means for preventing the seed under treatment from falling out of the range of action thereof, of seed inlet and discharge openings, a series of parallel openings in delinting cylinder, and

toothed disks journaled within said cylinder, and having their peripheries projecting through said openings, for removing the lint separated by the action of the machine, substantially as described.

7. In a cotton seed delinter, the combination with a delinting cylinder having an aperture therein, and means for preventing the seed under treatment from falling out of the range of action thereof, of seed inlet and discharge openings, an air flume in connection with the interior of the delinting cylinder, and a moving lint removing device stationed in said aperture formed to permit free access of air to the abrading surface therethrough, substantially as described.

8. In a cotton seed delinter, the combination with a delinting cylinder, and means for preventing the seed under treatment from falling out of the range of action thereof, of seed inlet and discharge openings, openings in the delinting cylinder, toothed disks journaled within said cylinder, and having their

peripheries projecting through said openings, for removing the lint separated by the action of the machine, and means for producing a central air current for freeing the interior of the delinting cylinder from the lint so removed, substantially as described.

9. In a cotton seed delinter, the combination with a delinting cylinder having an aperture therein, and a casing therefor likewise formed with an aperture, of seed inlet and discharge openings, means for rotating said cylinder, means for causing an air current to issue outwardly through the aperture in the casing, and also for causing an air current to issue inwardly through the aperture in the delinting cylinder, substantially as described.

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

JAMES J. FAULKNER.

Witnesses:

C. L. BERLIN,

JOHN HALLUM.