

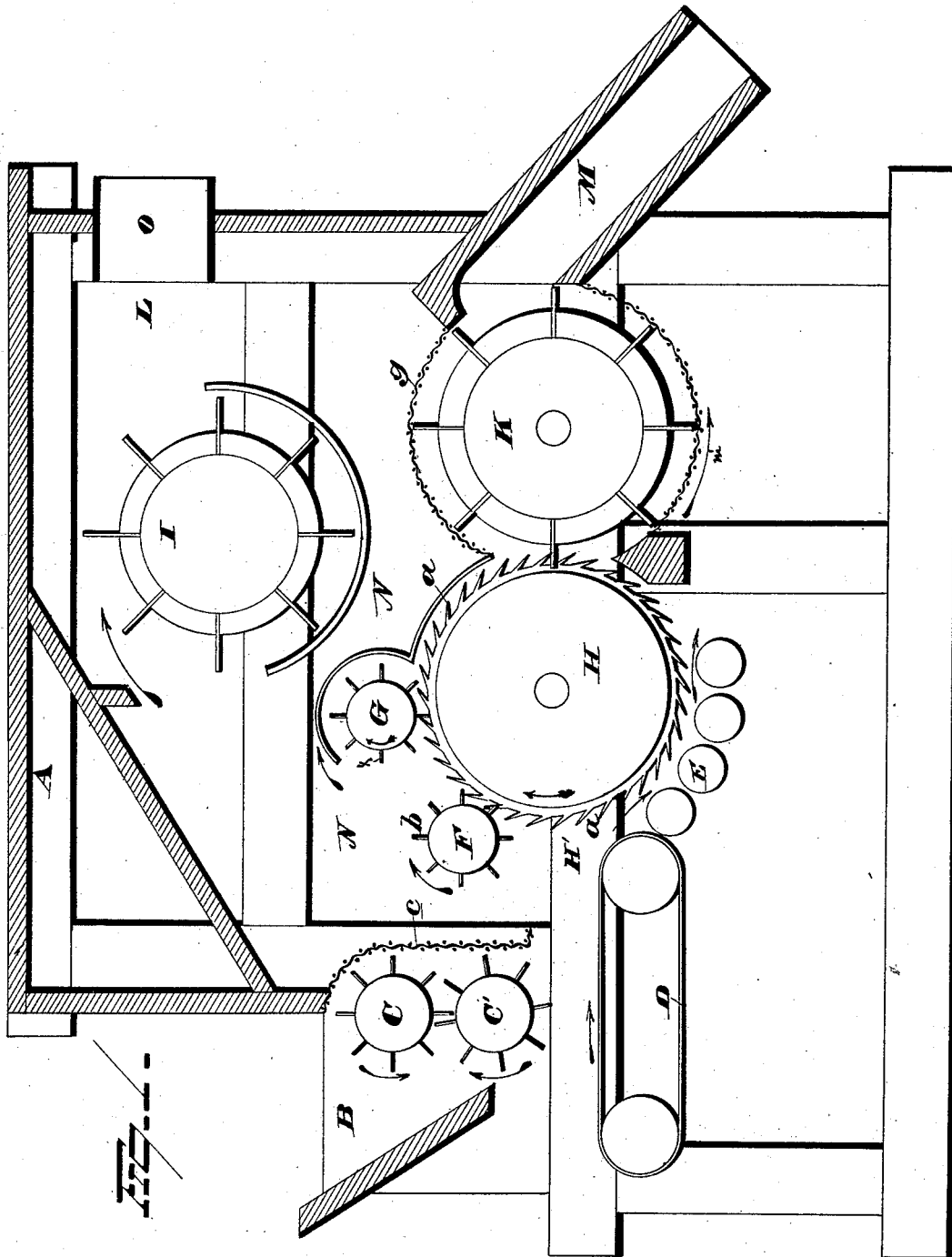
(No Model.)

3 Sheets—Sheet 1.

W. O. COLEMAN.
SEED COTTON CLEANING MACHINE.

No. 266,972.

Patented Nov. 7, 1882.



WITNESSES
S. G. Nottingham
A. M. Bugh

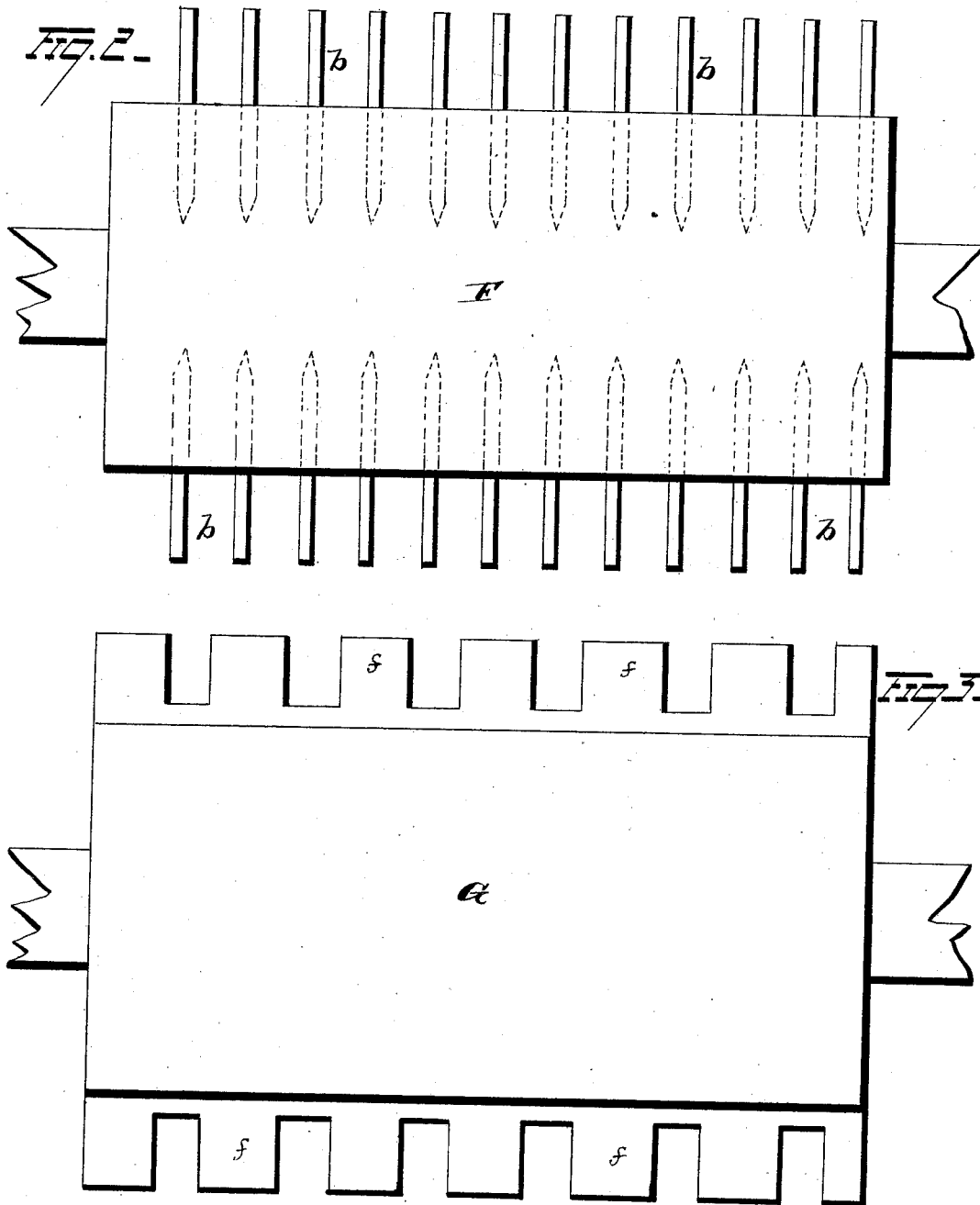
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3 Sheets—Sheet 3.

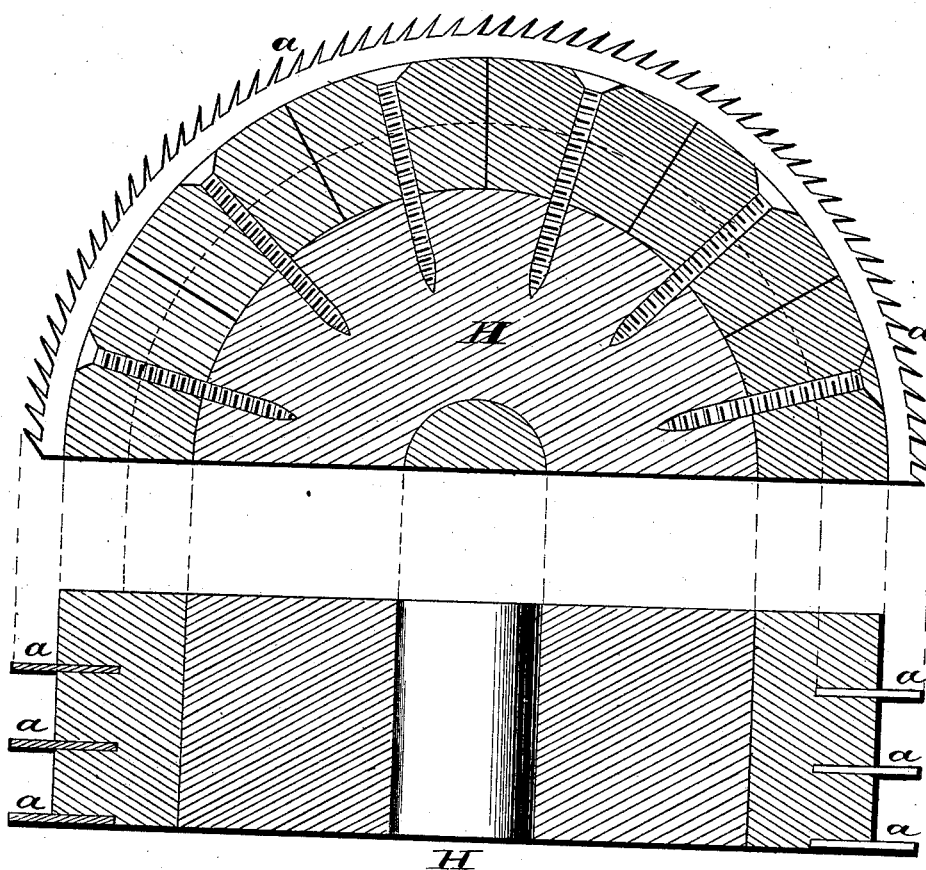
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Fig. 4.



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UNITED STATES PATENT OFFICE.

WILLIAM O. COLEMAN, OF MEMPHIS, TENNESSEE.

SEED-COTTON-CLEANING MACHINE.

SPECIFICATION forming part of Letters Patent No. 266,972, dated November 7, 1882.

Application filed May 5, 1882. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM ORSBERN COLEMAN, of the city of Memphis, in the county of Shelby and State of Tennessee, have invented certain new and useful Improvements in Seed-Cotton-Cleaning Machines; 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 pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to an improvement in seed-cotton cleaners and separators, the object of the same being to provide a device of this character which will combine simplicity and economy in construction with durability and efficiency in use; and with these ends in view my invention consists in parts and combinations of parts adapted to clean seed-cotton from bolls, hulls, sand, dust, leaves, and all other impurities that may be gathered with the seed-cotton, whether the same be picked with the fingers, gathered with implements operated by laborers, or with horse-power harvesters.

In the accompanying drawings, Figure 1 is a vertical longitudinal sectional view of a machine containing my improvements. Fig. 2 is a longitudinal sectional view of the stripping-roller provided with spikes. Fig. 3 is a longitudinal sectional view of the flanged stripping-roller, and Fig. 4 is a sectional view of the saw-cylinder.

I propose building this cleaner so that the seed-cotton may be delivered directly into the breast of the gin, or into any other suitable receiver.

Any gin-feeder of ordinary construction can be attached directly to my cleaner, so that the seed-cotton will fall directly into its hopper, and from thence through my cleaner, where it is cleared of any impurity, and is then delivered into the gin in a light, open, and clean condition, while the dust, sand, and other impurities are discharged by the force of the fan-blast from the cleaner, and out of the gin-house by a suitable flue.

In the drawings, A is the inclosing frame or box, and B the hopper thereof, into which the

seed-cotton to be cleaned is thrown or placed by any suitable means.

C C' are spiked beating-cylinders, journaled longitudinally in the hopper B, and adapted to engage the seed-cotton as it works downward, and opens the bolls and loosens or separates the seed-cotton from any impurities it may contain. These cylinders C C' revolve in opposite directions, and by suitable gearing the cylinder C is caused to revolve at a much lower rate of speed than the cylinder C', which latter revolves very rapidly. The directions of movement of these two cylinders, together with their unequal velocity, throw the seed-cotton, together with its impurities, against the spikes of the cylinder C with great force, and from thence on against the wire-cloth or perforated metallic screen c, during which a portion of the sand and dust and other small foreign particles are forced from the seed-cotton and pass through the screen c into the interior of the chamber, opening any unopened bolls and separating and loosening the seeds. After the seed-cotton has been thrown against the screen c it, together with the heavier trash that has not been discharged through the screen c, falls onto the endless apron D in a perfectly-open condition, and is carried thereby to near the saw-cylinder H. This cylinder H is suitably journaled in the side beams, H', and is provided on one end with a suitable belt or gear wheel, by means of which the necessary rotary motion is imparted thereto. The saws a of this cylinder are placed about three-quarters of an inch apart, and are secured to the cylinder in any desired manner. When the seed-cotton on the apron D reaches the saw-cylinder H it is taken up thereby and carried upward until it reaches the spiked cylinder F, which latter revolves much more rapidly than the saw-cylinder (in the direction indicated by the arrow) and knocks back the hulls, twigs, and other heavy impurities to the inner terminus of the endless apron D. As the apron D is run at a rapid rate of speed, only a thin surface of seed-cotton and other matter is retained thereon, the hulls, twigs, and other heavy trash being discharged from the endless apron D onto the rollers E, and finally discharged below the saw-cylinder, while the saw-

teeth carry the seed-cotton by the spiked cylinder F. As these rollers E are situated in close proximity to the under side of the saw H, and constantly expose the foreign matter to the action thereof, it follows that if any seed-cotton should by accident fall onto the rolls, or should adhere to the bolls being discharged, the saws will engage therewith and carry it upward to be acted on by the beaters or cylinders, to be hereinafter described.

I would have it understood that I do not confine myself to any particular number of rollers E, heretofore described, or to rollers provided with smooth peripheries, as shown, as it is evident that numerous means can be devised for accomplishing the same result without departing from the spirit of my invention.

The stripping beating-cylinder F is suitably journaled, and provided with means for revolving the same. This cylinder is made of wood, of suitable size, and is provided over its entire surface with spikes or nails *b*, preferably made from No. 8 wire, which latter travel between the saws and remove the impurities or foreign matter in the manner heretofore described. After the seed-cotton passes the spiked cylinder F it is carried by the saw H along to the stripping-cylinder G, which latter, from its peculiar construction and rapid rate of speed imparted thereto through suitable gearing or belting, knocks back and strips off much of the trash that escaped the spiked cylinder F into the air-chamber of the machine, or into the interior of the box, where it is carried off by the blast of the fan I.

The cylinder G, I prefer to partly incase, as shown in the drawings, and instead of being provided with spikes, similar to the cylinder F, it is provided with slotted sheet-metal flanges or ridges, as shown in Fig. 3; or, instead of making the flanges of a continuous piece of metal and slotting them, separate teeth, similar to those formed by slotting the continuous piece, can be secured in the cylinder in any desired manner. These flanges *f*, or ribs of metal, are generally secured to the cylinder G by forming grooves therein in the direction of the length of the cylinder, and securing the ribs therein by the use of nails. The slots between the adjacent teeth of the flanges are each about three-eighths of an inch in width, and are for the passage of the saws *a* of the cylinder H. As the saws and cylinder revolve in the direction of the arrows the teeth of the cylinder G scrape off or tear away the trashy portions from the sides of the cotton as it passes between them. After the seed-cotton has passed the cylinder G it is conveyed to the beating-cylinder K, which latter is situated in the same or approximately the same horizontal plane with the saw-cylinder, where it is stripped from the saws. This beating-cylinder K, I prefer to make with wooden heads secured to metallic flanges, and a wooden body screwed or otherwise secured to the

heads. The body is then turned to the desired diameter, and thin wire nails or spikes are driven into it, in the same manner as the cylinder F. After the seed-cotton has been taken up by the stripping-cylinder K it is carried in the direction indicated by the arrow *m* and discharged through the spout M. The cylinder K is incased in a wire-cloth or perforated metallic screen, *g*, and the cotton is carried over the screen and discharged into the gin, or into any receptacle prepared to receive it. The wire-cloth or perforated casing around this cylinder K allows any particles of matter foreign to the staple which have passed the other strippers and wire screen to be finally discharged from the machine.

The fan I is placed in such a position in the machine as to create a suction or draft, which lifts all dust and particles upward that are discharged through the perforated or wire-cloth casing *c*, that thrown back by the stripping-cylinder G, and also that thrown through the wire casing *g*, over the beater-cylinder K, by the action of said beaters in the air-chamber N.

The sand, dust, and all foreign particles are carried upward and over the fan into the fan spout or chute L, and discharged by the force of the blast through the pipe O, or any suitable conductor, out of the gin-house. As there is a constant current of air upward in the interior of the machine, all fine particles of dust, &c., remaining in the seed-cotton while the latter is being acted on by the cylinder K are forced upward through the perforated cover and out through the regular channel.

My device is simple in construction, is durable and efficient in use, and can be manufactured at a comparatively small initial cost.

It is evident that numerous changes in the construction of different parts might be resorted to without departing from the spirit of my invention, and hence I would have it understood that I do not limit myself to the exact construction of parts shown and described, but consider myself at liberty to make such changes as come within the spirit and scope of my invention.

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

1. In a machine for cleaning and separating cotton, the combination, with the receiving-hopper and two cylinders journaled therein, and provided with spikes or beaters, of an endless apron arranged below said cylinders, and a series of rollers arranged under the saw-cylinder, substantially as set forth.

2. The combination, with the saw-cylinder, of a suitable number of rollers situated under the said cylinder, in close proximity thereto, and adapted to convey the heavier particles of refuse material from out of the machine, substantially as set forth.

3. The combination, with the saw-cylinder and an endless apron for delivering the seed-

cotton and heavier particles of foreign matter to the saws, of the rollers E, situated under the saw-cylinder, and adapted to operate as described.

5 4. The combination, with the hopper, its contained cylinders, the endless apron, rollers E, and fan I, of the saw-cylinder adapted to take the seed-cotton from the endless apron, substantially as set forth.

10 5. The combination, with the endless apron, rollers E, and the saw-cylinder, of the stripping-cylinder F, provided with nails or spikes adapted to pass between the saw-blades, substantially as set forth.

15 6. The combination, with the saw-cylinder, of the cylinder G, incased, as described, and provided with slotted metallic flanges f, constructed and adapted to operate in conjunc-

tion with the saw-cylinder, substantially as set forth.

20 7. The combination, with the hopper, endless belt D, rollers E, and saw-cylinder H, of the cylinders F and G and the fan I, all of said parts being adapted to operate as described.

25 8. The combination, with the hopper B, cylinders C C', endless belt D, rollers E, and saw-cylinder H, of the cylinders F G K and fan I, all of said parts operating substantially as described.

In testimony that I claim the foregoing I have hereunto set my hand this 20th day of April, 1882.

WILLIAM ORSBERN COLEMAN.

Attest:

W. D. SMITH,
JOHN D. MILBURN.