

(No Model.)

C. T. MASON, Jr.

COTTON GIN.

No. 316,378.

Patented Apr. 21, 1885.

Fig. 1.

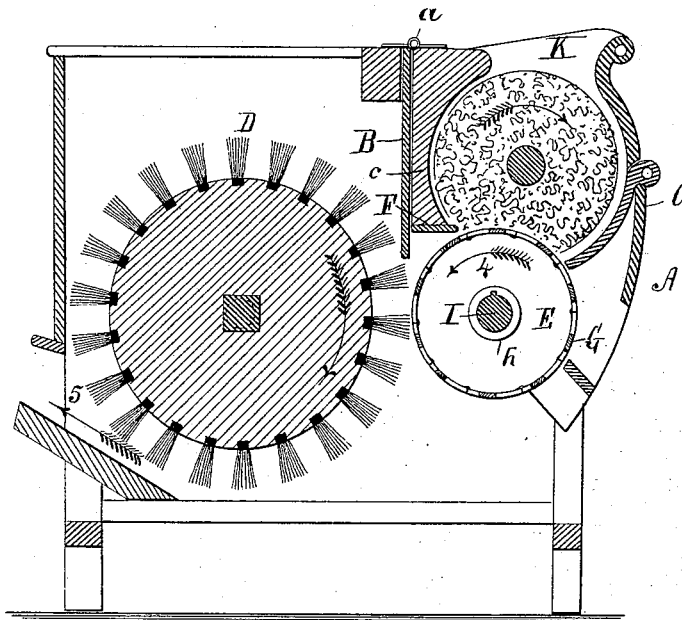


Fig. 2.

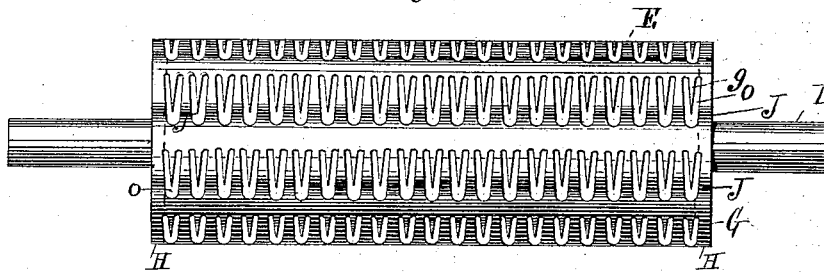
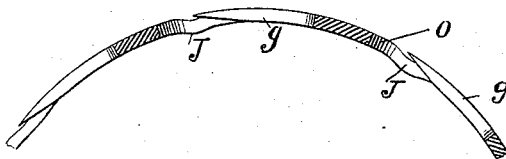


Fig. 3.



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# UNITED STATES PATENT OFFICE.

CHARLES THOMAS MASON, JR., OF SUMTER, ASSIGNOR TO THE MASON COTTON GIN CYLINDER COMPANY, OF CHARLESTON, SOUTH CAROLINA.

## COTTON-GIN.

SPECIFICATION forming part of Letters Patent No. 316,378, dated April 21, 1885.

Application filed November 15, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES T. MASON, JR., of Sumter, Sumter county, South Carolina, have invented a new and useful Improvement in Cotton-Gins, of which the following is a specification.

The invention relates to a cotton-ginning cylinder designed to take the place of the series of saws used in cotton-gins of usual construction, the grate grid or ribs employed in connection with said saws being also dispensed with.

The invention consists more particularly in the construction of the periphery of the cylinder, as hereinafter set forth.

In another application for Letters Patent filed September 10, 1884, No. 142,609, and now pending, I have fully set forth and described a cotton-ginning cylinder having a substantially smooth periphery, and upon said periphery teeth arranged in openings formed therein, the points of said teeth being disposed at or slightly above the level of the circumjacent portions of said periphery, and I have also described a particular arrangement of said teeth so disposed that they are caused by the rotation of the said cylinder in contact with the seed-cotton to be thrust into and so to penetrate the outer fluffy coating of the cotton-seeds before beginning to strip the lint or fiber therefrom. To this end in the aforesaid application I have shown and described teeth straight, flat, or tangential to the circumference of the cylinder, and hence not conforming to the curve thereof. In still another application for Letters Patent filed simultaneously herewith, No. 148,020, I have shown and described a cylinder of similar construction in which the teeth are differently disposed—that is to say, the cylinder is corrugated longitudinally, and has a row of teeth and openings along each corrugation. The curve of the teeth conforms to the curve of the corrugation; but by reason of the sharpness of the latter the forward end of the opening immediately in front of the points of the teeth is radially nearer to the axis of the cylinder than are said points; hence the lint may enter said opening in a tangential direction, and so meet the point; or, in other words, by reason of the free space surrounding the point, the latter may be thrust

into an opposing body for a determinate distance.

Referring to the accompanying drawings, Figure 1 is a cotton-gin of usual construction containing my improved ginning-cylinder, as hereinafter particularly set forth. Fig. 2 is an elevation of the cylinder separately; and Fig. 3 is a section of a portion of the periphery of said cylinder, showing the arrangement and disposition of the teeth.

Similar letters of reference indicate like parts.

A is the grate fall or breast, hinged to the main frame at *a*.

B is the back board, C the seed-board, and D the brush for removing the lint from the cylinder.

E is the ginning-cylinder, which in the machine occupies substantially the same position as the saw-gin cylinder in common use, the grate grid or ribs being removed and a bar, F, secured in the concave *c*. The grate fall or breast A, being hinged, as already stated, is adjustable nearer to or farther from the frame, and as the bar F is secured in said breast the movement of the latter may bring said bar nearer to or farther from the cylinder-surface.

The cylinder E consists of a sheet or thin plate of metal, G, preferably steel, which is bent in cylindrical shape, having its meeting edges secured together. It is provided at the ends with heads or disks of wood, H, (dotted lines, Fig. 2,) which are secured in any suitable way to a sleeve, *h*, adapted to receive the splined shaft I.

In the sheet or thin plate G, I form a number of slots or openings, *o*, disposed longitudinally across the surface or in the direction of the axis of the cylinder. In each slot or opening I form a pointed tooth, *g*, from the material of said sheet G and integral therewith, said tooth lying lengthwise the slot. By reason of the tooth being tapered and pointed and arranged in the slot there is an open space extending directly in front of the point of the tooth and on each side of the body thereof. Into this opening the lint (because of its elasticity and softness) can enter when brought in contact with the periphery of the cylinder.

In order that the point of the tooth may penetrate the exterior fluffy coating of the seed by

a direct thrust, or, in other words, in order that the cotton surrounding said tooth may meet the same in a direction tangential to the circumference of the cylinder, I form in the periphery of the latter and in front of the points of each row of teeth longitudinal recesses, depressions, or indentations, J. These recesses are very shallow; but when they are present the cotton surrounding the seed enters them, and in this way is presented to the point of the tooth, which, when the cylinder is rotated, thus is free to penetrate directly for a certain distance into the covering of the seed before it begins its drawing action on the fiber.

15 In operation the seed-cotton is fed into the receptacle K, and meets the toothed surface of the cylinder E, which rotates in the direction of the arrow 4. The teeth upon said cylinder engage only with the cotton lint, as already described, and carry the same past and under the bar F, which prevents seeds and other foreign substances being drawn around the cylinder with the lint. As the cylinder continues its revolution, the lint is removed from its teeth by the brush-wheel D, from which the cleansed material passes out of the machine in the direction of the arrow 5.

I claim as my invention—

1. A cotton-ginning cylinder having in its

periphery openings, and a tooth in each opening lying in a circumferential direction, the said tooth having its body conforming to the curve of the periphery and its point at the level of the general surface thereof, and a shallow recess or depression in said periphery in front of the point of said tooth, substantially as described.

2. A cotton-ginning cylinder having in its periphery a series of openings, and a tooth in each of said openings lying in a circumferential direction, the said tooth having its body conforming to the curve of the periphery and its point at the level of the general surface of the cylinder, and a shallow recess or depression in said periphery extending longitudinally across the cylinder and in front of the points of the series of teeth, substantially as described.

3. A cotton-ginning cylinder having a sheet-metal periphery, G, containing rows of openings *o* and contained teeth *q*, and longitudinal recesses or depressions J in said periphery extending in front of the points of said teeth, substantially as described.

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Witnesses:

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