

UNITED STATES PATENT OFFICE.

CHARLES T. 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. 316,379, 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 circumference 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 show and describe 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. 148,019, I have shown and described a cylinder of similar construction in which the teeth are differently disposed—that is to say, the cylinder has a substantially smooth periphery and teeth conforming to the curve thereof. In front of the point of each tooth is a very shallow depression or recess, into which the lint can enter, and so pass beneath the point of the tooth when the cylinder is rotated. By means of this depression or recess the point is enabled to penetrate for a determinate distance into the fluffy coating of the cotton-seed before the drawing of the fiber begins.

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, the periphery of which is longitudinally corrugated. 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 each of the corrugations of the sheet or thin plate G, I form a row or series of slots or openings, *o*, disposed longitudinally 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, the tooth lying lengthwise the slot and conforming to the curve of the corrugation containing said slot. The points of the teeth are disposed at or about the level of the general surface of the said corrugation. By reason of each tooth being tapered and pointed and arranged in the slot there is an open space in the periphery of the cylinder 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 in a radial direction, as shown by the arrow 1, Fig. 3, toward the axis of the cylinder when brought

into contact with the periphery of said cylinder. On referring to Figs. 1 and 3 it will be seen that the radius of the curve of each corrugation is shorter than the radius of the general circumference of the cylinder, and also that the edges of each corrugation are nearer the axial center of the cylinder than the central or middle portions, L, of said corrugations. Consequently each of the slots *o* formed in said corrugations will have its outer extremity, *p*, Fig. 3, nearer said axial center than the portions of said slot which extend on each side of the contained tooth, and hence the lint may enter said slot not only in a radial direction, as indicated by the arrow 1, Fig. 3, but also in a tangential direction, as indicated by the arrow 2 in said figure; or, in other words, when the cylinder E is rotated, the point of each tooth will be thrust directly into the coating of the seed for a short determinate distance before it begins to draw the fiber from the body of said seed.

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—

A cotton-ginning cylinder having a longitudinally-corrugated periphery of sheet metal, and in each corrugation a series of slots, each slot containing a tooth formed of the metal of said periphery, and having its point at about the level of the circumjacent surface of said periphery, substantially as described.

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Witnesses:

PARK BENJAMIN,
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