(No Model.)

3 Sheets—Sheet 1.

D. B. HASELTON.

COTTON HARVESTER.

No. 313,422. Patented Mar. 3, 1885.

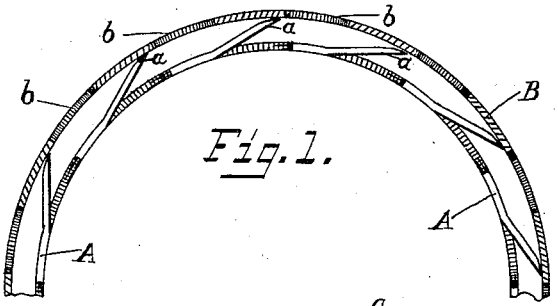


Fig. 1.

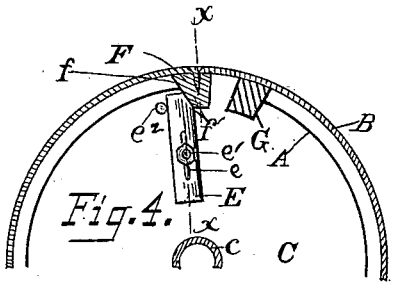


Fig. 4.

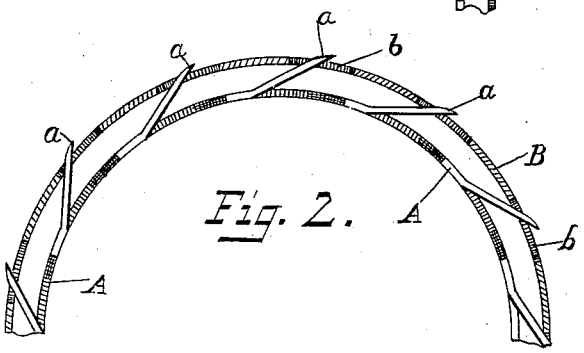
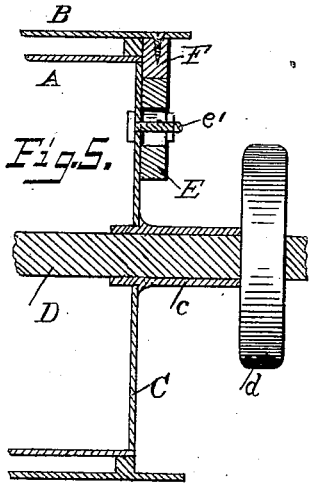


Fig. 2.



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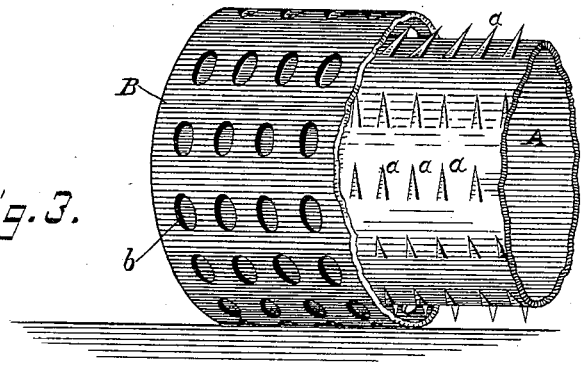

Fig. 3.

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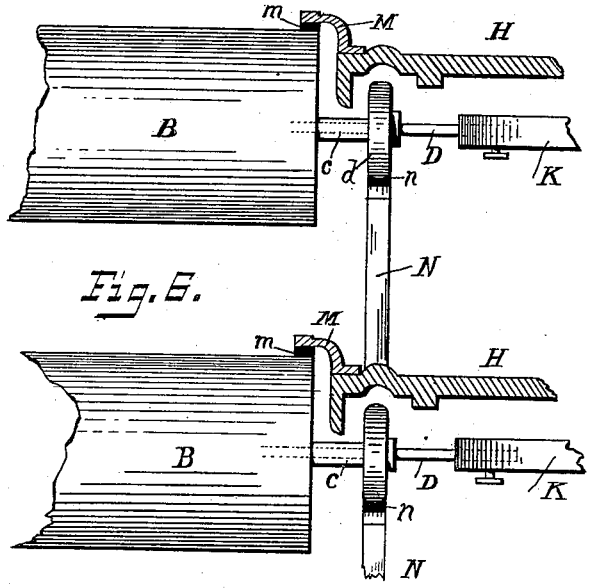
(No Model.)

3 Sheets—Sheet 2.

D. B. HASELTON.

COTTON HARVESTER.

No. 313,422. Patented Mar. 3, 1885.



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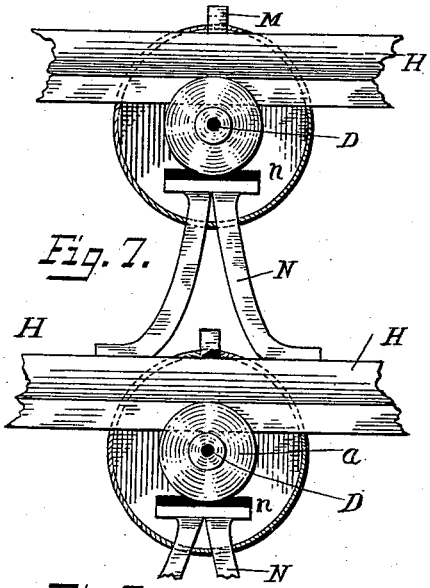
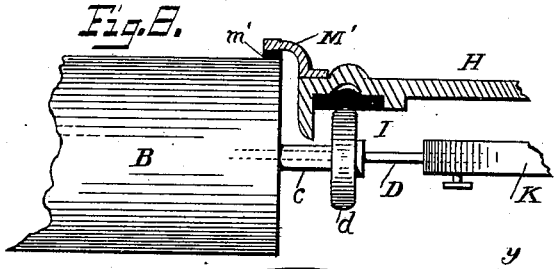


Fig. 7.



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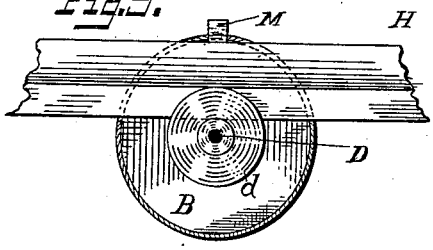

Fig. 9.

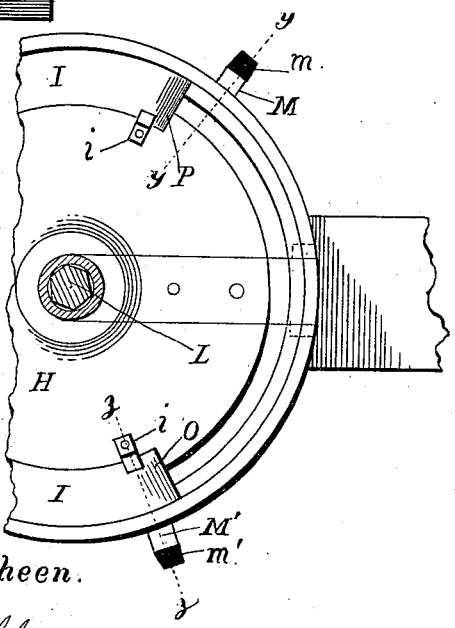

Fig. 10.

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(No Model.) 3 Sheets—Sheet 3.

D. B. HASELTON.

COTTON HARVESTER.

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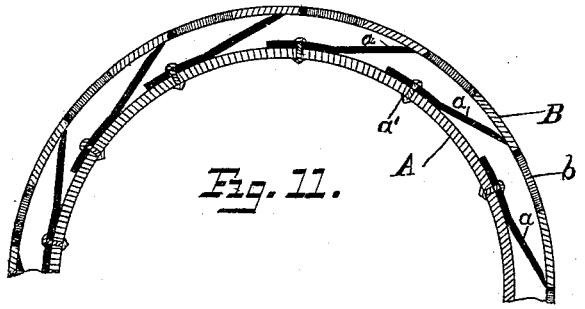


Fig. 11.

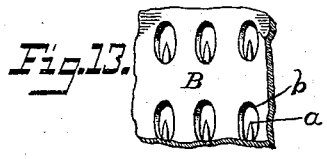


Fig. 13.

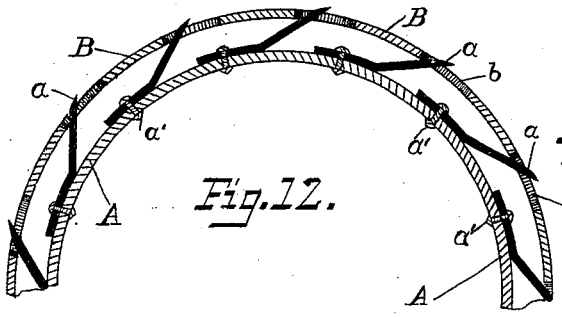


Fig. 12.

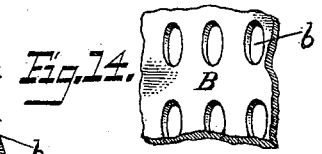
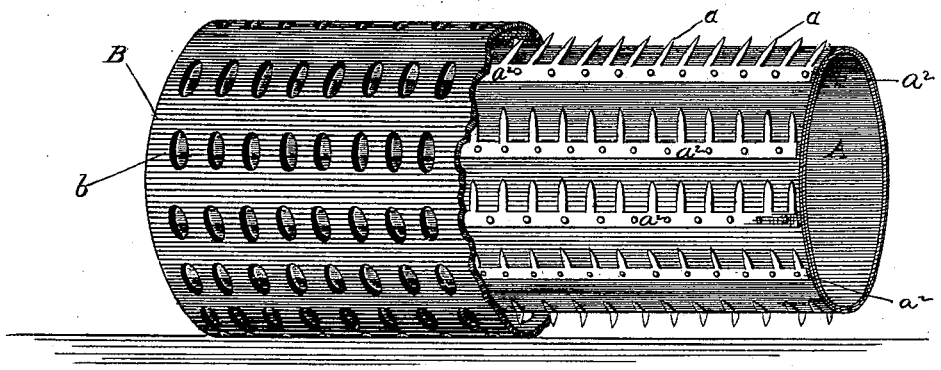


Fig. 14.

Fig. 15.



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UNITED STATES PATENT OFFICE.

DANIEL B. HASELTON, OF CHARLESTON, SOUTH CAROLINA, ASSIGNOR TO THE SOUTHERN COTTON PICKING COMPANY.

COTTON-HARVESTER.

SPECIFICATION forming part of Letters Patent No. 313,422, dated March 3, 1885.

Application filed April 8, 1884. (No model.)

To all whom it may concern:

Be it known that I, DANIEL B. HASELTON, a citizen of the United States, residing at Charleston, in the county of Charleston and State of South Carolina, have invented certain new and useful Improvements in Cotton-Harvesters, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention has relation to cotton-harvesters; and the object is to provide a machine that can be drawn between the rows of cotton-plants and automatically pick the ripe cotton; and to that end the novelty consists in the construction, combination, and arrangement of the picking devices, as will be hereinafter more fully described, and particularly pointed out in the claims.

In the accompanying drawings, the same letters of reference indicate the same parts of the invention.

Figure 1 is a cross-section of the picker-cylinders with the teeth withdrawn. Fig. 2 is a similar view with the teeth projecting. Fig. 3 is a detached view in perspective of a portion of a picker-cylinder. Fig. 4 is an end view of a portion of a cylinder, showing the means for adjusting the points of the teeth. Fig. 5 is a longitudinal section of the same. Fig. 6 is a side elevation, partly in section, of the picker-cylinders and their operating mechanism. Fig. 7 is an end view of the same on section *y y*, Fig. 10. Fig. 8 is a detail of parts shown by Fig. 6, and Fig. 9 is an end view of the same on section *z z*, Fig. 10. Fig. 10 is a bottom plan view of the stationary driving-plate shown in Figs. 6, 7, 8, and 9. Figs. 11, 12, 13, 14, and 15 are modifications of the picker-cylinders shown in Figs. 1, 2, and 3.

A is the inner cylinder, and B the outer cylinder. The inner cylinder is made of a single piece of metal, from the body of which is struck up a series of teeth, *a*. The outer cylinder, B, has a series of perforations, *b*, through which the teeth *a* project, and these teeth, being of spring material, will extend through said perforations as shown in Fig. 2, whereas if the outer cylinder, B, be turned forward while the inner cylinder, A, is stationary the teeth *a* will be withdrawn below the periphery of the outer cylinder, as shown in Fig. 1.

C is the end of the inner cylinder, A, and it is provided with a sleeve, *c*, forming a bearing fitting on the spindle D. The inner end of the sleeve *c* is provided with a pulley, *d*, which drives the cylinders A and B.

E is an adjustable bar secured to the end C by means of the bolt *e'*, passing through the slot *e* in said bar; and e^2 is a pin which acts as a brace for the upper end of said bar.

F is a stop on the cylinder B, and its beveled edge *f* comes in contact with the beveled edge *f'* of the bar E.

G is a rigid stop on the end C, and it will thus be seen that the outer cylinder has a limited play with reference to the inner cylinder corresponding to the distance between the stop G and the bar E, so that if said bar E be withdrawn radially inward this play will be increased, while if it be adjusted outwardly the play will be diminished.

When the cylinders A and B are in the position shown in Fig. 4, the inner cylinder, A, is pushed forward with reference to the outer cylinder, B, and consequently the teeth are in the position shown in Fig. 2, their points extending beyond the surface of the outer cylinder. If, however, the inner cylinder is pushed back while the outer one is stationary, the teeth will be withdrawn within or below the periphery of the cylinder B, and the teeth will then assume the position shown in Fig. 1, and in this position the stop F on the outer cylinder is in contact with the stop G on the inner cylinder, as the distance which the points of the teeth *a* project or extend beyond the surface of the cylinder B depends on the play of said cylinder with reference to the inner cylinder, A, and, as this play is regulated by the adjustable bar E, it follows that by adjusting said bar the points of the teeth may be made to extend through the perforations *b*, more or less, as desired.

H is a stationary driving-plate, provided on its under side with a mutilated rubber track, I, secured in place by clips *i i*.

B is the outer and A the inner cylinder, the end C′ of the latter having the sleeve *c*, provided with the pulley *d*, the whole revolving upon the spindle D, attached to a collar, K, rigidly secured to a shaft, L, upon which the driving-plates are also mounted, but not so as to revolve. It will thus be seen that the plate H, being stationary, and the collar K carrying the spindles D, upon which the cylinders A B revolve, with the pulley *d*, in contact with the rubber track I, the said cylinders constantly revolve in their own plane on the axis L, and also rotate upon their own axes in the direction of the teeth—that is to say, forward.

M M′ are arms secured to the stationary driving-plate H, and their forward ends, on their under sides, are provided with soft-rubber brakes *m m′*, which come in contact with the periphery of the outer cylinder, B, each once while it is making one revolution in its own plane about the axis L.

N is a bracket secured to the top of each of the plates H, except the top one, and it is provided with a short section of rubber track, *n*, which comes in contact with the pulley *d* at the same time that the brake *m* engages the cylinder B.

The object of the devices just described is to automatically change the positions of the cylinders A and B with reference to each other, thereby withdrawing the teeth, as above described. When the pulley *d* is clear of the track I, the cylinder B is free to revolve on its own axis while it is rotating in its own plane around the shaft L, and in this position the teeth *a* are withdrawn. As soon as it comes to the point where the pulley *d* comes in contact with the beginning O of the track I it begins to revolve the pulley and both the cylinders A and B on their own axes; but at the same time the brake *m′* comes in contact with the periphery of the cylinder B; this retards it, while the pulley *d* is rotating the inner one, A. This causes the teeth *a* to extend, and they continue extended while the pulley is traveling around the track from the beginning O to the end P of said track. When it arrives at this point, the pulley *d* leaves the track and is free; but at this point it comes in contact with the section *n* on the bracket N, located underneath the arm *m*, so as to operate on the side opposite to that in contact with the track I. Consequently, it is rotated in the opposite direction to that in which it was formerly revolving while it was in contact with the mutilated track I. At the same time the periphery of the cylinder B engages the brake *m′*, which momentarily retards it, and this double action changes the relative position of the cylinders A and B, as formerly described, and the result is that the teeth are withdrawn, as shown in Fig. 1. When it reaches the beginning O again, the teeth are projected, as before, and remain so until the point P is reached, when the teeth are again withdrawn, and so on indefinitely when the harvester is at work. Should any of the teeth *a* on the cylinder A become damaged or broken, new teeth may be secured to the cylinder A by rivets *a′*, as shown in Figs. 11, 12, and 13, or the whole cylinder may be thus furnished with teeth, in which case it will be found convenient to form a series of the teeth *a* integral with the strip a^2, which is then secured to the cylinder A by the rivets *a′*, as above described. When the teeth *a* are extended beyond the periphery of the outer cylinder through the perforations *b*, and the cylinders rotated, the teeth gather the cotton fiber, and when they come to that point where the relative position of the cylinders is changed it will be observed that the teeth are withdrawn through the perforations *b* by what may be termed a "backward-wiping motion," which thoroughly removes the fiber from the teeth, leaving it perfectly free to fall from the surface of the outer cylinder. This manner of withdrawing the teeth—that is to say, by drawing them backward in a line from heel to point—is a very important feature, as it not only effectually discharges the teeth, but prevents any of the fiber being drawn into the cylinder B.

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

1. In a cotton-harvester, a picking device consisting of an inner cylinder provided with a series of spring-teeth and an exterior cylinder having a series of openings through which said teeth project, as and for the purpose set forth.

2. In a cotton-harvester, a toothed cylinder arranged concentrically within a perforated outer cylinder, and provided with means, substantially as described, whereby its position relative to the outer cylinder may be changed, for the purpose set forth.

3. In a cotton-harvester, a toothed cylinder provided with a series of spring-teeth, in combination with an exterior perforated cylinder adapted to have a limited motion with reference to said toothed cylinder, whereby the spring-teeth on the inner cylinder may be alternately projected and withdrawn through the perforations in the outer cylinder, as and for the purpose set forth.

4. The combination of the exterior perforated cylinder, B, having the stop F, and the interior toothed cylinder, A, having the adjustable bar E and rigid stop G, as and for the purpose set forth.

5. The combination, with the exterior perforated cylinder, B, having the rigid stop F, provided with a beveled face, *f*, of the interior toothed cylinder, A, provided with the bar E, having beveled face *f′* and slot *e*, the stud or pin e^2, bolt *e′*, and rigid stop G, as and for the purpose set forth.

6. The combination, with the stationary

driving-plate H, having mutilated rubber track I and arms M M′, of the cylinder B, and the inner cylinder, A, having pulley *d*, as and for the purpose set forth.

7. The combination, with the stationary driving-plate H, having mutilated track I, arms M and M′, and bracket N, of the spindle D, upon which are mounted the cylinder B, and the cylinder A, having the pulley *d*, as and for the purpose set forth.

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

DANIEL B. HASELTON.

Witnesses:

H. J. ENNIS,

CLIFFORD H. SHEEN.