

(No Model.)

E. VAN WINKLE.

COTTON GIN.

No. 347,666.

Patented Aug. 17, 1886.

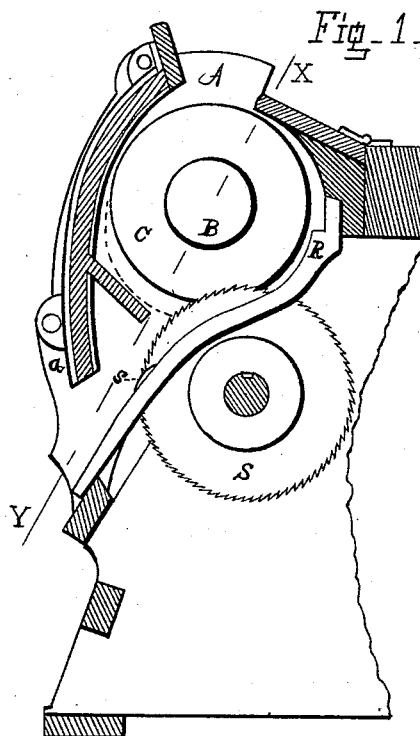
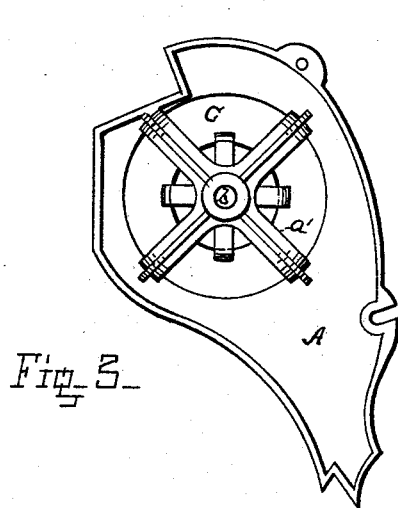
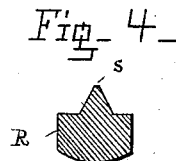
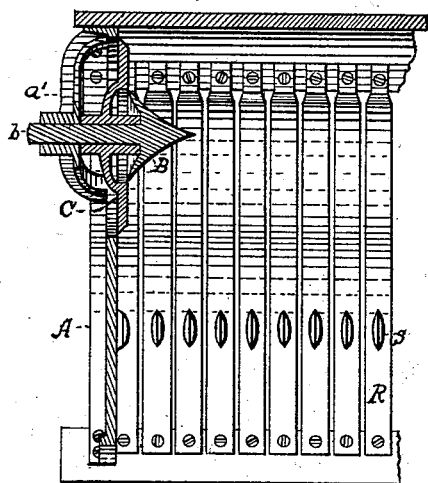


Fig. 2-



Witnesses —

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UNITED STATES PATENT OFFICE.

EDWARD VAN WINKLE, OF ATLANTA, GEORGIA.

COTTON-GIN.

SPECIFICATION forming part of Letters Patent No. 347,666, dated August 17, 1886.

Application filed April 12, 1886. Serial No. 198,627. (No model.)

To all whom it may concern:

Be it known that I, EDWARD VAN WINKLE, a citizen of the United States, residing at Atlanta, in the county of Fulton and State of Georgia, have invented certain new and useful Improvements in Cotton-Gins; and I do 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, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

In the accompanying drawings, Figure 1 is a vertical longitudinal section through a portion of a gin, including the roll-box and saws. Fig. 2 is a section of one end of the roll-box on the line X Y, Fig. 1, showing the face of the grid. Fig. 3 is a view of the outside of one of the roll-box heads. Fig. 4 is an enlarged section of a rib through the projections.

Similar letters refer to similar parts in the several figures.

In the figures, S represents the saws, and R the ribs, of the gin.

A represents one of the heads of the roll-box, which is provided with a circular opening, as shown, and on the outer side with a bracket, *a'*, in which is a hole to receive the stud *b*, which projects into the interior of the roll-box, and is provided with a conical abutment, B.

C is one of the revolving rings, which is journaled on the stud *b*.

Both heads of the roll-box being alike—that is to say, having the circular openings and the brackets *a'*, the studs *d*, having conical abutments B, and the rings C—I have shown but one head; but the description and drawings are intended to apply to both.

a is a seed-board, which forms the outer wall of the roll-box.

s represents projections on the ribs S at the points where the saws first enter to pass upwardly through the grid. The ribs of the grid curve upwardly near their centers, for the purpose of curving the roll inwardly, to give the teeth of the saws a greater distance

to travel in the seed-cotton composing the roll, and to cause a downward or sagging projection of the roll at its bottom to assist the discharge of the seeds from the ends of the roll, as will be hereinafter explained.

In a saw-gin the roll of seed-cotton is turned by contact with the saws, but necessarily at a slower peripheral motion. Otherwise the teeth of the saws would not obtain a sufficient hold of the fiber to remove it from the seed. For the purpose of insuring a slower motion of the roll, a certain amount of friction is necessary, which is amply provided for in the contact of the peripheral surface of said roll with a portion of the roll-box, which peripheral contact is uniform throughout the entire length of the roll. As ordinarily constructed, there is also considerable friction on the ends of the roll, which, not having a uniform effect throughout the length of the roll, is detrimental. There is also an undue accumulation of seeds at the ends of the roll, and this difficulty is aggravated by the imperfect regulation of the discharge of seed from the roll-box, necessitating the running of the roll in an undesirably hard condition. These difficulties are entirely obviated by the use of my improvements. By a better regulation of the seed-discharge, which is effected by the projections on the ribs forcing the escaping seeds to pass close to the teeth of the saws before being dropped from the roll-box, thus insuring their being carried back to the roll, if not sufficiently clean, I am enabled to run with a softer roll. The roll not being retarded by friction at the ends of the roll-box, as the seed-cotton coming in contact with the revolving rings is not impeded in its motion at the surface, and as the central portion of the roll comes in contact with the stationary conical abutments B, it relieves the revolving rings C of a great portion of the longitudinal pressure, which permits the rings C to run more freely on the studs *b*. The center of the roll being softer than the surface, the stationary abutments B are made conical, for the purpose of sustaining the ends, which are not as strong as the rest of the roll, and to force the cleaned seed, of which the center of the roll is principally composed, which would naturally

accumulate in the ends, from the center to the surface, and thereby assist their discharge from the roll-box. This discharge, however, is so regulated by the projections on the ribs of the grid as to prevent the seed being discharged before being freed from their lint. As the seed are shed from the roll, they come in contact with these projections, and are by them forced to pass close to the teeth of the saws, which, if the lint has not been entirely removed from the seed, will again take the seed up and carry it into the roll, by reason of which, the roll being relieved of a greater portion of its friction, the seed can be ginned clean with a soft roll, thereby lessening the pressure in the roll and greatly facilitating the ginning, as well as improving the staple.

The stationary conical abutments B are of such diameter as will about cover the apertures in the rings C, but do not enter the apertures in said rings, being so placed as to have their outer edges as nearly as possible meet the inner edges of the revolving rings C, as shown in Fig. 2, for the purpose of preventing an accumulation of lint, as is found to be the result of the abutment of two surfaces having considerable breadth. For the same reason the revolving rings C do not enter the apertures in the heads A, but meet edge to edge in the same manner. It is also advantageous to have these rings project into the roll-box, as it assists that part of the seed-cotton that is ginned by the saws nearest the ends of the roll-box to resist the action of the saws more effectually than when lying against level surfaces. It is also found that the cleaned seeds that are pressed against the heads are thereby prevented from dropping out as readily as from other parts of the roll; but, as the roll is caused by the ribs to sag or take a slightly-elliptical form and project the bottom side below the rings C, as shown by the dotted lines, Fig. 1, the sagging portion will be relieved from pressure by the inwardly-projecting rings C, and the roll will drop its seeds as readily from the ends of the roll as from other parts.

I am aware that revolving heads have been put in the roll-boxes of gins; but my device is different from these and better, inasmuch

as the stationary abutments B sustain the weak parts of the roll and provide against an unnecessary end-pressure of the roll against the revolving rings, causing them to run more easily, by reason of which they do not, to so great an extent, retard the roll. The roll will therefore run more easily, and consequently in a softer condition. My invention also prevents the accumulation of cleaned seed in the ends of the roll, and provides non-clogging joints between the moving and the stationary parts.

I am also aware that ribs having projections on their faces have been used in cotton-gins, but none of them would perform the same functions as will that part of my invention—that is to say, force the seed, in passing out of the roll-box, to come in contact with the teeth of the saws before those teeth enter the roll or the incoming cotton, which contact with the roll or incoming cotton would render the teeth incapable of picking up the imperfectly-cleaned seed.

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

1. In a cotton-gin, the combination of the roll-box heads A, the stationary abutments B, and the revolving rings C, substantially as described.

2. In a cotton-gin, the rings C, projecting into the roll box, in combination with the seed-board *a* and the ribs R, substantially as described, and for the purpose specified.

3. In a cotton-gin, the combination of a roll-box having an opening at its bottom for the discharge of the seed, with saws projecting into the roll-box, and the grid formed of ribs provided with projections on their upper sides at the points where the saws first enter to pass upwardly through the grid, substantially as shown, and for the purpose specified.

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

EDWARD VAN WINKLE.

Witnesses:

W. W. BOYD,

JAMES A. SHIELDS.