W. Y. LAYTON.

Cotton Gin.

No. 6,463. Patented May 22, 1849.

Fig. 1

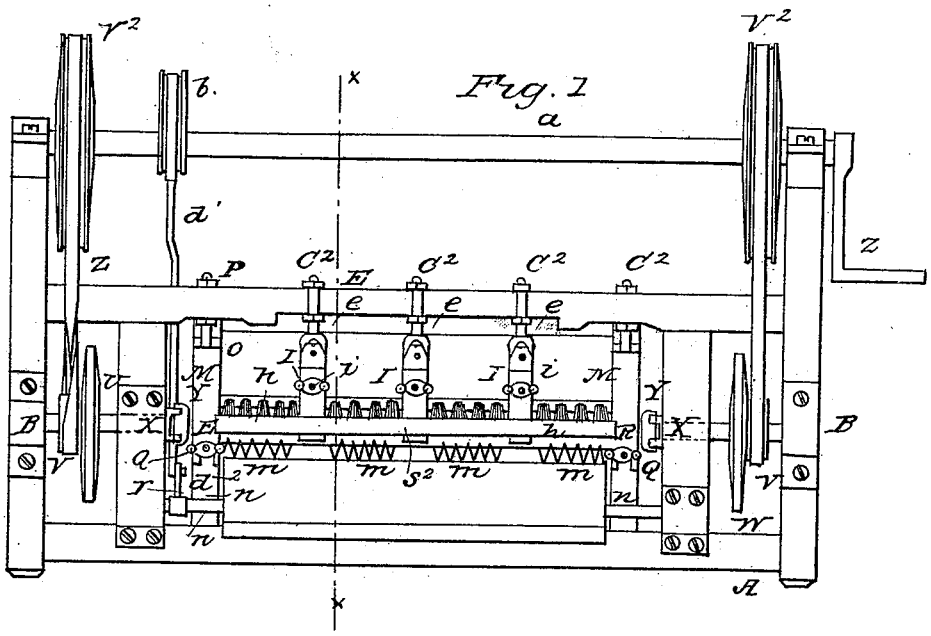
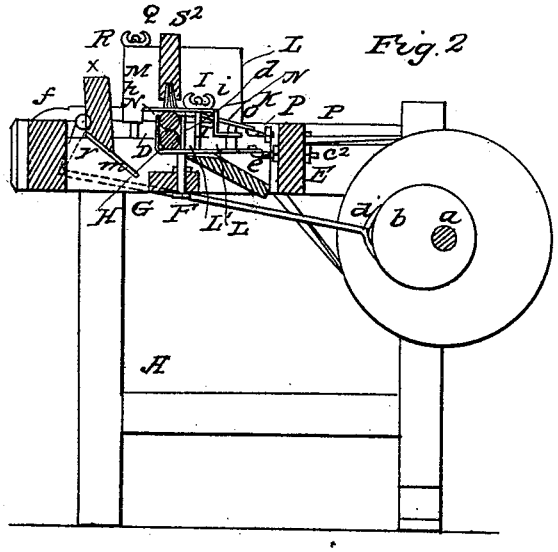


Fig. 2



UNITED STATES PATENT OFFICE.

WM. Y. LAYTON, OF DARLINGTON, SOUTH CAROLINA.

IMPROVEMENT IN COTTON-GINS.

Specification forming part of Letters Patent No. **6,463**, dated May 22, 1849.

To all whom it may concern:

Be it known that I, WM. Y. LAYTON, of Darlington, in the district of Darlington and State of South Carolina, have invented a new and useful machine for separating the lint or cotton-wool from the seed of long-staple, sea-island, or other cotton, called "the Self-Leveling Roller Cotton-Gin;" and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings of the same, making part of this specification.

Figure 1 is a top view; Fig. 2, a transverse section on the line *x x* of Fig. 1.

To enable others skilled in the art to make use of my invention, I will proceed to describe its construction and operation.

I construct a frame, A, to hold the machinery of my self-leveling roller-gin, out of scantling of wood or other suitable material, making the superficies of said frame about forty-four inches long, twenty inches broad, and thirty inches high, square, or of any convenient size and proportion. The roll-boxes C are of metal, the number depending on the size of the roll and the kind of power to be used. The outside boxes are pieces of metal intended to hold the rolls, and are screwed down to the side pieces, so that the indentation of the box shall be in the center of said piece. The inside bottom boxes, C, are metal indented at one end to hold the roll, with two vertical pieces, D *d*, at right angles to the plane of box and parallel to each other, intended to keep the cotton from getting into or between the roll and box. The bar of metal (one end of which is intended, as before specified, to be called the "box-bar") terminates in a screw, C^2, with double taps E *e*, and is inserted horizontally through the back top rail, one of its taps, *e*, acting as a shoulder to the other tap, E, thereby enabling the operator (by screwing said taps) to make the boxes coincide; and a vertical bolt having double taps G *g*, said bolt being riveted through the box-bar C near the box, or where the pressure of the rolls H *h* is, the screw end passing through one of the transverse pieces of the frame, and the taps G *g* acting in the same way as in the bar to make the boxes horizontal. Each of the box-bars C are about nine inches long, three inches of which is the horizontal bolt C^2. Equidistant between the indentation of the box and the termination of screw is a hole through which a screw-bolt, I, is put to clamp the top box, K, on the top roll, *h*, to bring the rolls H *h* to the required pressure. At the screw end is a pivot, L, that holds the top box, K, to its place, and acts as a hinge when the rolls have to be taken out. The top inside boxes or clamps, K, are six inches long, indented at one end to fit top roll, *h*, and the other end has a hole large enough to fit the pivot L of bottom box-bar.

Equidistant between the indentation for the top roll, *h*, and perforated hole for pivot or hinge is another orifice coinciding with the one above described in bottom box-bar, through which the clamp-bolt I passes to confine the rolls (by the screw-tap *i* on the top end) together. The tightening the screw-taps *i* makes the top box, K, press on the rolls, so that the lint of the cotton-wool will pass through and leave the seed behind. The side clamps, M, are wood, and have a box of metal, N, indented to fit the top roll, screwed on the bottom of said clamp and terminating in a hinge, *o*, connected with a screw, P, double tapped, (as the inside bottom boxes,) and are fastened through the back top rail, and so hinged, as aforesaid, that they fold back when the rolls are to be taken out, and are clamped down on the rolls by a bolt, Q, and screw-tap R, so as to be tightened at the will of the operator. The wood side clamps have a groove just over the indentation of box, to hold a brush, S, to keep the cotton from winding or lapping round the top roll. A strip of wood, S^2, about six inches broad, and of a length to suit the size of gin, has the brushes S in it, and is made to slide in the grooves of the side clamps, M, so that the brushes shall press on the top roll. There is a similar brush, T, placed under the bottom roll, H, to clean it, at any convenient angle and of any size. The journals U, that drive the rolls, may or may not have fly-wheels. They are ten inches long, with a bearing at each end of two and one-half inches. There is a pulley, V, of convenient size and thickness, and a fly-wheel, W, (if great execution with little power is required,) nearest the inside or roll end of the machine, with a "chuck" or "crank," X, at the same end to catch against the dog Y, through which the roll H passes, so that when the journal turns the roll H has to turn also.

The chuck X is a circular cap of metal three inches diameter, one and a half inch long, and has a groove through it, so that the "dog" or double tail-pieces on the rolls H *h* may be inserted in it. The rolls H *h* are any convenient size and length, from three-fourths of an inch to one inch diameter. The length depends on the power, small power requiring short rolls. They have a dog, Y, or tail-piece three inches long with a square hole in the center, through which the roll is fastened, and of sufficient size to give strength. The square of them longitudinally is one inch, except in the center, which is one-half inch, and the hole in the center is five-eighths inch if the roll is seven-eighths inch diameter. The number of rollers is two for one gin. If more than one gin in a stand is run, each will have two rolls. The pulleys or journals have a band round them communicating with a wheel on the main cylinder. The motion of the rolls is transverse to each other, and such motion is got by crossing the band Z, that drives the upper roll, *h*. The driving-cylinder *a* is placed and boxed at a convenient position back of the back post, and has the two pulley-wheels V^2 on it which drive the pulleys V on roll-journals. It also has an eccentric wheel, *b*, surrounded by a strap, *d'*, of metal, going off to an arm, *r*, and turned at right angles or bent at d^2 to fit in the holes of the arm *r* or lever that puts the hopper *x* in motion by the revolving motion of the eccentric *b*. The hopper *x* is of wood or iron, about seven inches broad, and has pins or teeth *m* of metal at a convenient angle and length to feed the rolls and brush close enough to take away the seed and surplus cotton from the rolls H *h*. This hopper or feeder *x* is sustained by gudgeons *n* and boxed on the journal-rails, and has a lever, *r*, extending from one of the gudgeons to receive the crook or bent end of the eccentric-shaft. All the gudgeons, journals, and cylinders are boxed and capped at any convenient position, reference being had to the rolls and the line upon which they are established.

A crank, *z*, or pulley on the cylinder *a* may be used to put the machine in motion.

I do not claim the frame, gearing, rollers, brushes, vibrating hopper, and fingers of the roller cotton-gin as new; but

What I do claim as my invention, and desire to secure by Letters Patent, in the before-described improved roller cotton-gin, is—

1. The combination of the adjustable bearings or boxes C K and screws I, F, and C^2, with the rollers H *h* and hinged caps M, for supporting, holding, and adjusting the rollers at the several points between their ends where said bearings are applied and are liable to wear, arranged and operating substantially in the manner and for the purpose set forth, by which the operator is enabled to obtain a parallelism of revolving surfaces however unevenly the bearings may wear, the rollers being made to coincide by separate and independent screws and taps or wedges, or in any way by which the same object may be attained and by which the rollers shall be made to produce equal pressure on the cotton-wool as it passes between them.

2. The combination of the hinged caps M with the hinged plate N, forming the upper end bearings, and the brush-block S^2 and brushes S, arranged in such manner as to admit of their being raised from the rolls.

WM. Y. LAYTON.

Witnesses:
WM. P. ELLIOT,
A. E. H. JOHNSON.