

W. L. ELLIS.
Cotton-Gin.

No. 223,721.

Patented Jan. 20, 1880.

Fig. 1.

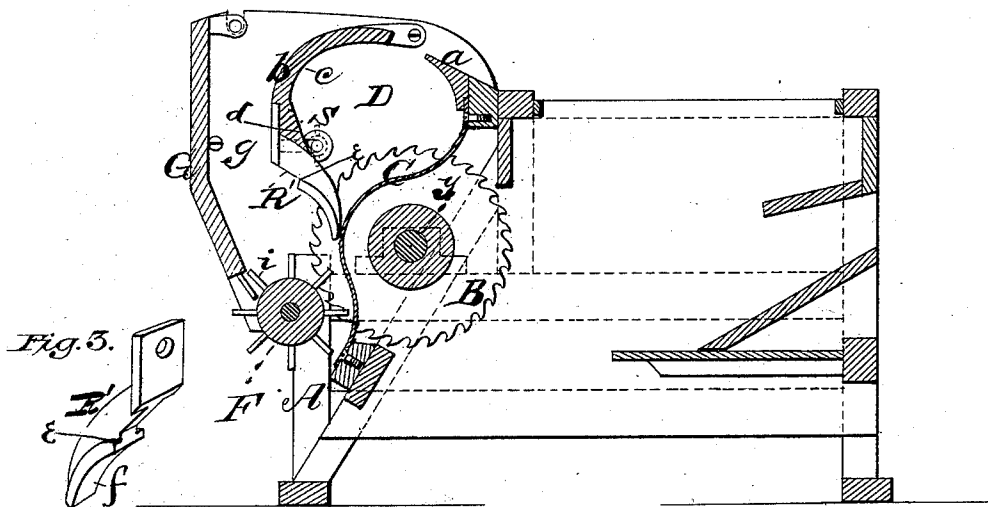
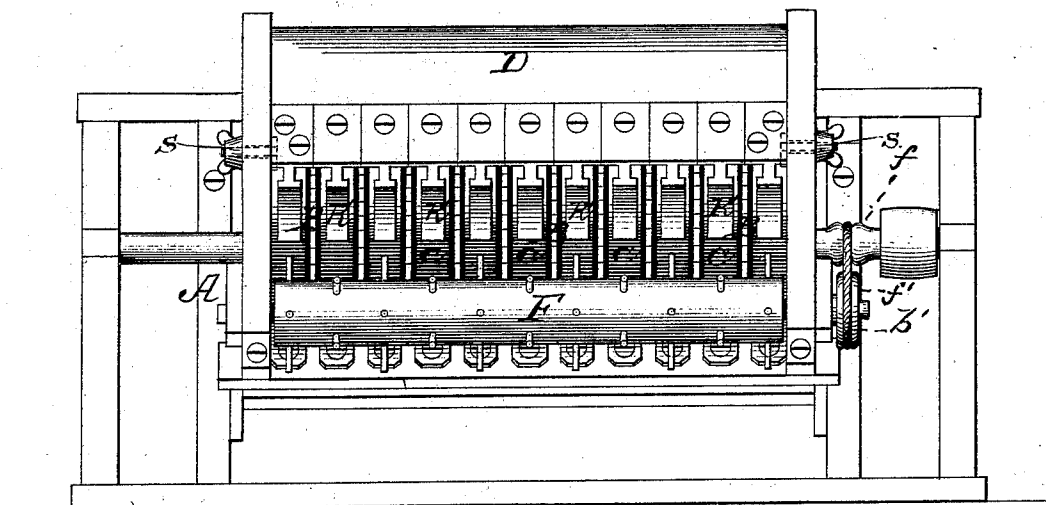


Fig. 2.



WITNESSES

John A. Ellis,
F. J. Bassi.

INVENTOR

W. L. Ellis,
by E. W. Anderson
his ATTORNEY

UNITED STATES PATENT OFFICE.

WASHINGTON L. ELLIS, OF PRATTVILLE, ALABAMA.

COTTON-GIN.

SPECIFICATION forming part of Letters Patent No. 223,721, dated January 20, 1880.

Application filed June 7, 1879.

To all whom it may concern :

Be it known that I, WASHINGTON L. ELLIS, of Prattville, in the county of Autauga and State of Alabama, have invented a new and valuable Improvement in Cotton-Gins; 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, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a longitudinal section of my improved gin. Fig. 2 is a front view thereof with the apron removed, and Fig. 3 is a detail view of the ribs or toes.

My invention relates to an improvement in cotton-gins. Heretofore cotton-gins have been provided with supplemental ribs secured at their upper ends to the breast-board, the lower portion of the rib being provided with a central longitudinal rib. This construction or form of rib has been found defective, owing to the fact that the longitudinal ribs on the face of the several supplemental ribs form chambers on each side of the gin-saws, wherein the cotton will become matted or clogged, and thus impair the operation of the machine. Again, supplemental ribs have been formed with plain convex outer faces throughout their length; but such construction of ribs has also been found defective, in that the cotton will clog or become matted at the angle formed between the upper portion of the rib and breast-board, to which it is attached.

The object of my invention is to so improve cotton-gins as to obviate the difficulties and objectionable features heretofore met with; and to that end my invention consists in the combination, with a saw-cylinder, main ginning-ribs, and a hinged breast-band, of a series of supplemental ribs secured to the lower edge of the hinged breast-board, each constructed of a narrow rib portion having a plate formed on its upper end for its attachment to the breast-board, and a concavo-convex plate formed on its lower end, the concave side or face being made plain, and the convex side located toward the roll-box, the upper and lower plates being separated sufficiently to

form an intervening space between their adjacent edges on opposite sides of the narrow rib, whereby the seed or bolts in the cotton are separated therefrom by means of the saws pulling the cotton through the spaces between the plain concave faces of the lower plates on the ribs, and the seeds or bolts caused to fall into the seed-box and the clogging of the cotton prevented, while the cotton that is carried above the plain-faced concave plates is allowed to pass through the spaces formed above the concave-faced plates on each side of the narrow rib.

A designates the frame of the gin, affording bearings to mandrel *y*, on which are secured, in any desired manner, the ordinary gin-saws *B*, arranged at a proper distance apart and working in between the main ribs *C*. The saws *B* extend into a cotton-box, *D*, consisting of a fixed rounded portion, *a*, to which the upper ends of the ribs are attached, and of a breast-board, *b*, hinged at its upper end to the main frame, the lower edge of the breast-board having a number of supplemental ribs, *R'*, secured thereto. The lower ends of the supplemental ribs *R'* may be adjusted toward or from the main ribs *C* by means of clamp-slides *S*, extending through the ends of the box *D* and bearing against the lower edge of the hinged breast-board *b*.

A drum, *F*, provided with radial teeth *i*, is arranged in the frame so that its teeth will work between the saws, said drum being actuated by a belt, *b'*, passing around pulleys on the shaft *f* and pulley *f'*, the latter attached to the drum shaft or spindle.

Exterior to the casing or cotton-box is an angular apron, *G*, conforming in shape to the solid ends of the box, and controlled, if desired, by suitable screws inserted in the sides of said ends, said apron being pivoted, hinged, journaled, or otherwise secured to the ends of the box so as to swing. Its lower and free end is inclined inwardly and projects down nearly in line with the top of the drum, and is provided with teeth located between those of the drum.

The cotton, as it is gathered from the field, passes down between the box *D* and apron *G* through the passage *g*, and, being seized by the

spiked roller or drum, which revolves toward the saws, is carried within reach of the latter, and, being carried between the supplemental ribs R' , is relieved of hulls, sticks, and other foreign matter before reaching the ginning devices, composed usually of the saws, ribs, and brush. The upper portion of each supplemental rib R' is provided with a plate for securing the rib to the breast-board. From the lower end of said plate extends a narrow rib, on the lower portion of which is formed a concavo-convex plate, which is located adjacent to the side of the saw. As the hulls, sticks, or other foreign matters come in contact with the plain concave face of the supplemental rib they are disengaged from the cotton, the latter being pulled through the space between said plates, while the foreign matter falls to the floor or onto any suitable receptacle. Between the adjacent edges of the plates formed on the upper and lower portions of each one of said supplemental ribs is formed a space for preventing the cotton from becoming clogged or matted at such point, which would be the effect were the supplemental rib made of equal width throughout its length.

After the cotton has been disengaged from the coarse foreign substances it is carried by the saws through the supplemental ribs into the box D , and, forming a roll inside of the same, the lint is drawn through the main ribs

into the lint-room. The seed screened out by the main ribs roll around on the incline d at the lower inside portion of the hinged breast-board b until thoroughly cleaned, when they pass over the points of the supplemental ribs R' , and between them down on the main ribs, and drop out of the machine.

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

In a cotton-gin, the combination, with a saw-cylinder, main ginning-ribs, and a hinged breast-board, of a series of supplemental ribs, R' , secured to the lower edge of the hinged breast-board, each of said supplemental ribs being formed of a narrow rib having a plate at its upper end for its attachment to the breast-board, the lower portion of the narrow rib being provided with a concavo-convex plate, the concave face being plain and the convex side located toward the roll-box, a space being formed between the adjacent edges of the upper and lower plates on opposite sides of the narrow rib, substantially as set forth.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

WASHINGTON LAFAYETT ELLIS.

Witnesses:

C. J. HALL,
JOHN R. JOHNSON.