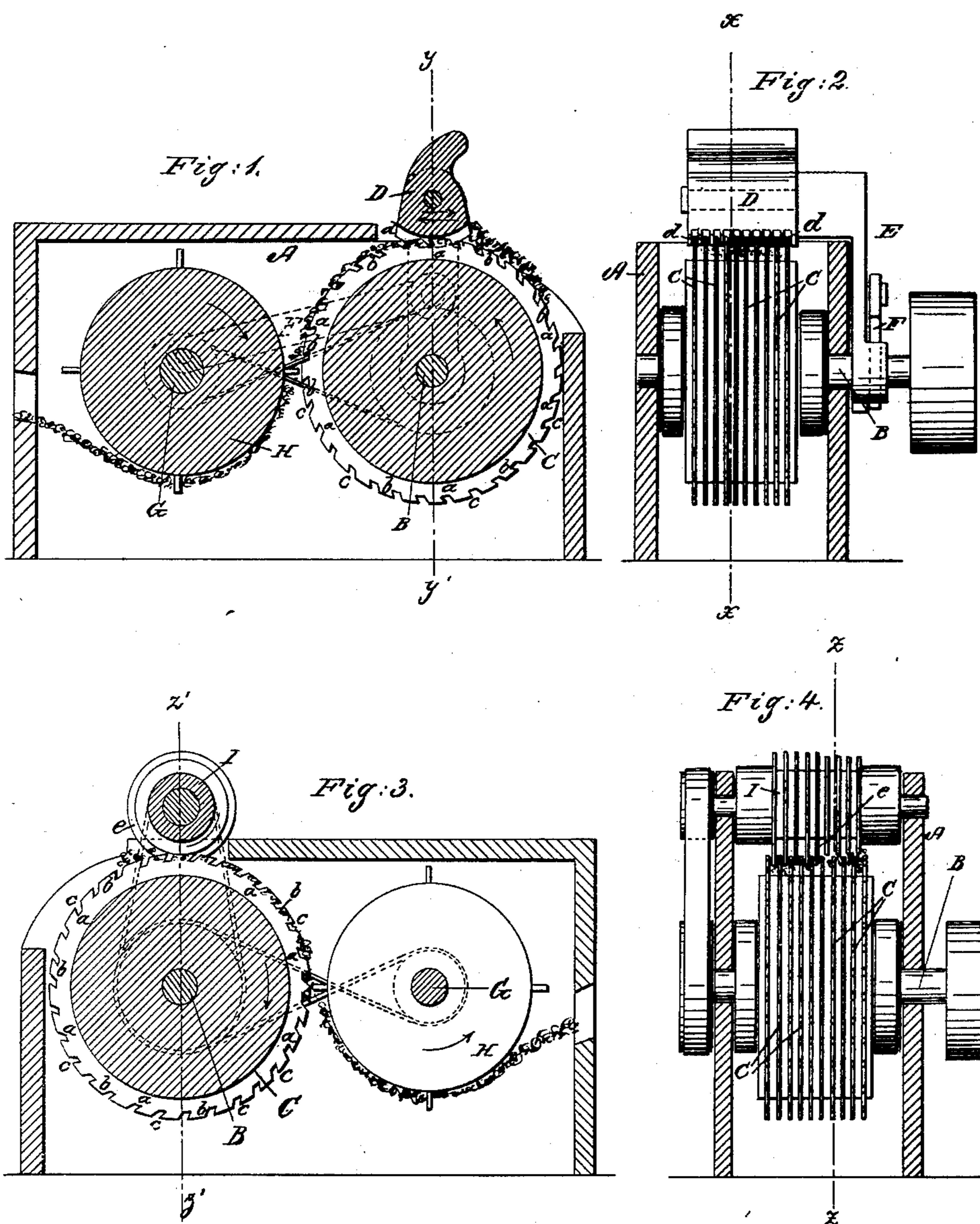


L. S. CHICHESTER.

Cotton Gin.

No. 21,795.

Patented Oct. 12, 1858.



UNITED STATES PATENT OFFICE.

LEWIS S. CHICHESTER, OF NEW YORK, N. Y., ASSIGNOR TO HENRY G. EVANS, OF SAME PLACE.

IMPROVEMENT IN COTTON-GINS.

Specification forming part of Letters Patent No. 21,795, dated October 12, 1858.

To all whom it may concern:

Be it known that I, LEWIS S. CHICHESTER, of the city, county, and State of New York, have invented a new and Improved Saw Cotton-Gin; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a longitudinal vertical section of my invention, taken in the line $x x$ of Fig. 2. Fig. 2 is a transverse section of the same, taken in the line $y y$, Fig. 1. Fig. 3 is a longitudinal vertical section of the same, taken in the line $z z$, Fig. 4. Fig. 4 is a transverse section of the same, taken in the line $z' z'$, Fig. 3.

Similar letters of reference indicate corresponding parts in the several figures.

The object of this invention is to obtain a gin that will perform its work more rapidly than the ordinary saw-gin without in the least injuring the staple or fiber, an objection attending the operation of the latter. The object is attained by dispensing with the usual stationary breast, which consists of a series of ribs placed in a frame, and between which ribs the saws work, and the cotton is forcibly drawn through in detached masses by the teeth of the saws, and using instead an oscillating breast in connection with saws armed with peculiar teeth, the whole being arranged as hereinafter fully shown and described, whereby a much greater number of saws may be used on a given length of shaft and the cotton allowed to pass between the breast and saws in an unbroken layer or bat of uniform thickness and the seed effectually separated and ejected therefrom.

To enable those skilled in the art to fully understand and construct my invention, I will proceed to describe it.

A represents a box or case, which may be of wood, and B is a shaft which is placed transversely in the box or case, and has a series of saws, C, placed on it, the saws being a trifle less than an eighth of an inch apart, or at such distance as will prevent the smallest cotton-seed passing between them. These saws are not armed with the usual pointed teeth, but have their edges notched tangentially at suit-

able and equal distances apart, as shown at a , to form teeth b , having smooth outer surfaces curved corresponding to the regular curvature of the saws, each tooth having a retaining or catching edge, c , which, however, does not project beyond its outer curved surface. This will be clearly understood by referring to Figs. 1 and 3.

D, Figs. 1 and 2, represents an oscillating breast which is formed by having a longitudinal section of a cylinder placed over the saws C, and in the same plane with their shaft B. The periphery of the breast is grooved transversely with its axis in such a manner as to form ledges or projections d , which are directly in line with the spaces between the saws C, and may, if desired, project downward a trifle between them, a slight space being allowed between the projections and the edges of the saws, as shown clearly in Fig. 2. The breast D is attached to arms E, the lower ends of which are fitted loosely on the shaft B, and are connected by rods F eccentrically with pulleys attached to the shaft G of a stripper, H, as shown by dotted lines in Fig. 1. The stripper H may be of usual construction, placed directly back of the saws C, and is driven by a cross-belt from the shaft B of the saws.

The arrows in Fig. 1 indicate the movement of the several parts.

The operation is as follows: The box A has a suitable hopper attached to it, and the saws C are rotated by any proper means. The saws C catch the cotton and convey it to the "bite" or angle formed by the saws and the breast, the latter having a very short but rapid vibratory or oscillating movement. When the breast moves outward, as indicated by the red arrow, it has a tendency to feed the cotton to the saws and press it snugly and evenly between their teeth. The breast loads the saws, and hence obviates the necessity of the usual pointed sharp teeth, and by this same outward movement shoves or ripples the seed effectually from the cotton, which passes in an unbroken layer or sheet between the saws and breast. The seed, while being prevented from passing between the saws and breast, owing to the close proximity of the saws, cannot be cut by them, but will be ef-

fectually acted upon by the outward movement of the breast to be fully separated from the fiber and expelled from the mass. Thus it will be seen that by this improvement the staple cannot be injured by the action of the saws, as they are merely passive or do not by their teeth forcibly disengage the cotton from the seed by drawing the cotton between a breast or grating, as in the old saw-gin. The separating of the seed in my invention is mainly due to the action of the breast, and hence the operation is widely different from the usual saw-gin and all modifications of it with which I am acquainted.

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

The saws C, in combination with the oscillating breast D, the parts being constructed and arranged to operate substantially as and for the purpose herein set forth.

LEWIS S. CHICHESTER.

Witnesses:

WM. TUSCH,

W. HAUFF.