

J. BUTTS.

Rice Thrashing Mill.

No. 5,600.

Patented May 23, 1848.

Fig: 1.

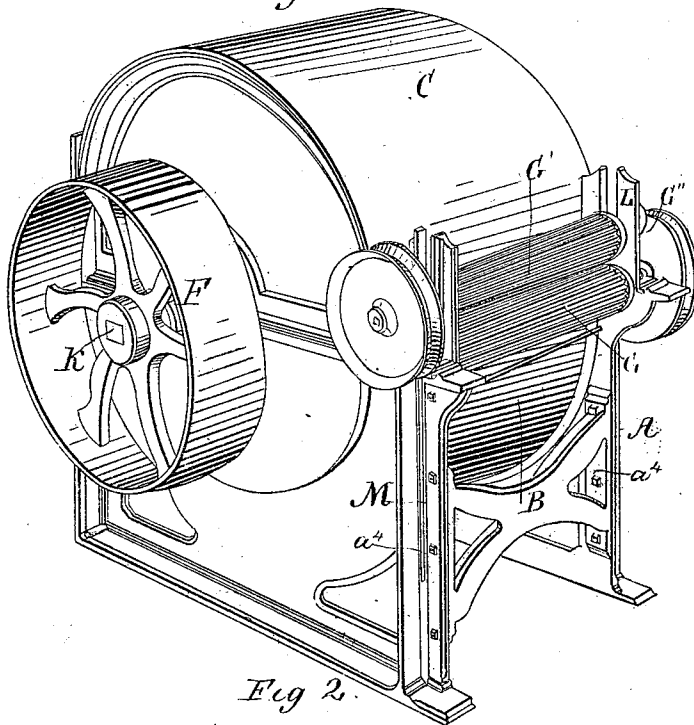
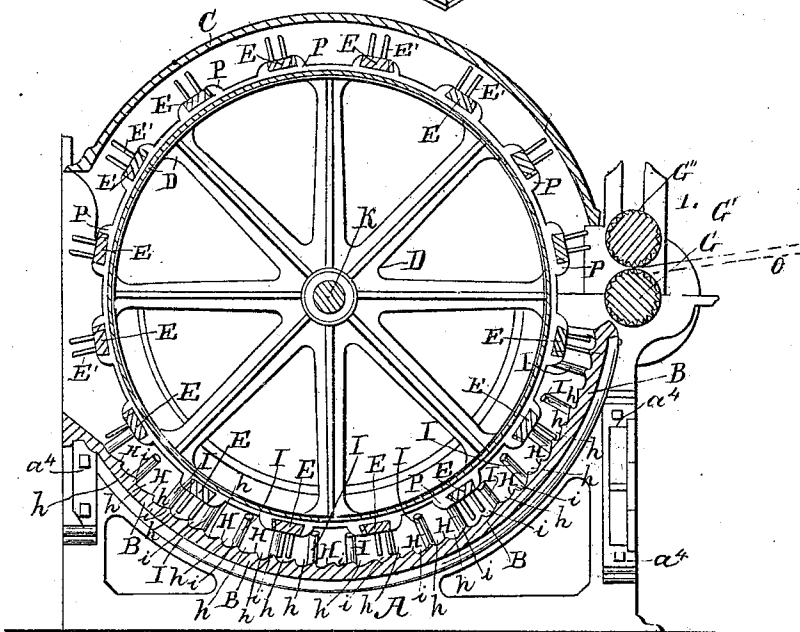


Fig 2.



UNITED STATES PATENT OFFICE.

JEHIEL BUTTS, OF CHARLESTON, SOUTH CAROLINA.

THRESHING-MACHINE.

Specification of Letters Patent No. 5,600, dated May 23, 1848.

To all whom it may concern:

Be it known that I, JEHIEL BUTTS, of Charleston, in the district of Charleston and State of South Carolina, have invented a new and useful Improvement in Machines for Threshing Rice, called a "Rice-Threshing Mill," which is described as follows, reference being had to the annexed drawings of the same, making part of this specification.

Figure 1 is a perspective view of the machine. Fig. 2 is a vertical longitudinal section of ditto.

Similar letters in the figures refer to corresponding parts.

This machine in its general features, resembles the ordinary threshing machine; that is to say it consists of an oblong frame A, in which as contained, a concave bed B, and cover C, forming a cylindrical case, and inclosing a cylinder D, armed with bars of teeth E on its periphery, for beating the rice, and forcing it against ribs formed in the concave—said cylinder, receiving a rotary motion from a band, passing around a drum F on its shaft, and also communicating motion to a pair of fluted feeding rollers G G arranged in the front part of the frame, by means of a band, extending from a pulley on said shaft, to a corresponding one on the shaft of one of the rollers. Although I do not design, to make a particular claim to the construction of these parts, yet, I have deemed it necessary to a full understanding of my improvements, to give a general description of their arrangement, and mode of operation.

The frame A, is made of cast iron secured together by bolts and nuts, and provided with suitable boxes, for supporting the shaft K of the cylinder D. The concave B, consists of a series of cast iron segment plates B inserted in grooves formed on the insides of the sides of the frame, being curved, to correspond with the segment of the circle upon which they are arranged, and having a number of ribs H, formed on their inner surfaces, forming an abrupt edge, H, to meet the rice in its progress through the concave, and also a small concave surface h, extending from the upper part of the edge of each rib H, to the lower points of the succeeding rib, for the purpose of turning the rice partly around, before it reaches the next abrupt edge. Another series of ribs I, of a similar form to the above, except

that instead of being concave they are made convex, are formed on each end of the concave or bed B, extending from the bottom of the same toward the center of the cylinder and forming a connection with every alternate rib H of the first mentioned ribs H at i Fig. 2.

The cylinder D, is secured on the horizontal shaft K, and consists of two skeleton heads D, having dove-tailed grooves formed on their peripheries, in which are inserted cast iron bars E, made to correspond with said grooves on their edges, and having two rows of cast steel teeth E' projecting from their outer surfaces, for beating the rice, and forcing it through the concave—a movable cap C, is placed over the cylinder, to prevent the rice, &c., from being thrown over the top of the machine—The cylinder is lined with sheet iron to prevent the foot stalk and rice from passing through unthreshed.

Two fluted rollers G', G are arranged, one above the other, at the front part of the machine, parallel to the shaft of the cylinder, between which, the sheaves of rice, are introduced to said cylinder from the inclined table o. The lower one of these rollers G, turns in boxes, attached to the frame, and the upper one in sliding boxes G'', arranged between vertical slides L, secured to the frame—said sliding boxes projecting beyond the sides of the slides, a sufficient distance to receive weighted rods M, which are attached to them and serve with their own gravity, to press the upper roller against the rice, as it passes between it, and the lower one, and loosen the same from the straw or stem. An inclined feeding table represented by dotted lines in Fig. 2 at, o, is secured immediately in front of these rollers, upon which the sheaves of rice, are placed before being introduced to the machine.

The superiority of this machine over those in common use is—First it being made entirely of iron, and steel, has a greater strength and durability and neatness. Second it requires only one half the speed of those constructed in the ordinary manner and consequently runs with less friction. Third, requires less persons in attending, from the great advantage gained, from its power and strength, and in threshing without untying the sheaves, which was never before attempted with success—to my

knowledge. Fourth, it is very compact, and threshes the grain perfectly clear of foot stalk. Fifth, from its construction it can be easily attached to other machines. Sixth it threshes nearly treble the quantity of the common kind—of machines.

The operation of the machine is as follows:—Motion to the number of 350 revolutions per minute, being communicated to the cylinder D, the sheaves of rice (untied) are moved on the table *o* and passed between the feeding rollers G, G', which loosen the stalks from the rice and force it in contact with the beaters E' of the cylinder D, by which it is drawn through the concave B, between the ribs H, on the concave surface of the same, and the skeleton cylinder, being forced in its progress through said concave; in contact with the abrupt edges of the ribs H and I, on the bed, and sides, and turned round at each successive edge, by means of the concave surfaces *h* of said ribs, in order to present all parts of the rice to equal action;—and after being thus subjected to the action of the beaters, and ribs, is discharged at the back part of the machine, thoroughly threshed and ready for the next operation.

The cylinder D of the beaters E', re-

sembles an iron steam boat propelling wheel, 30 having instead of paddles, rows of steel teeth E' inserted into bars of iron, wedged into dovetailed grooves formed on the peripheries of the heads of the cylinder, by means of wedges P, one edge only of each 35 bar, may be made dovetailed and the opposite edge, against which the wedges are driven made straight, or at right angles to the face—the grooves in the heads for their reception being made of corresponding 40 shape.

What I claim as my invention and which I desire to secure by Letters Patent—is—

The arrangement of the short ribs I, on the inner sides of the end of the case, as 45 combined with the alternate ribs H, of the concave B as set forth,—and represented at Fig. 2 which shows the junction of the ribs I with the ribs H standing at right angles to each other—the first named ribs being on 50 lines radiating from the centers of the heads and the latter on lines running parallel with the shaft.

JEHIEL BUTTS.

Witnesses:

W. RILEY,
JAMES TUPPER.