

(No Model.)

# A. DE LANCEY MIDDLETON.

## RICE DRILL.

No. 300,883.

Patented June 24, 1884.

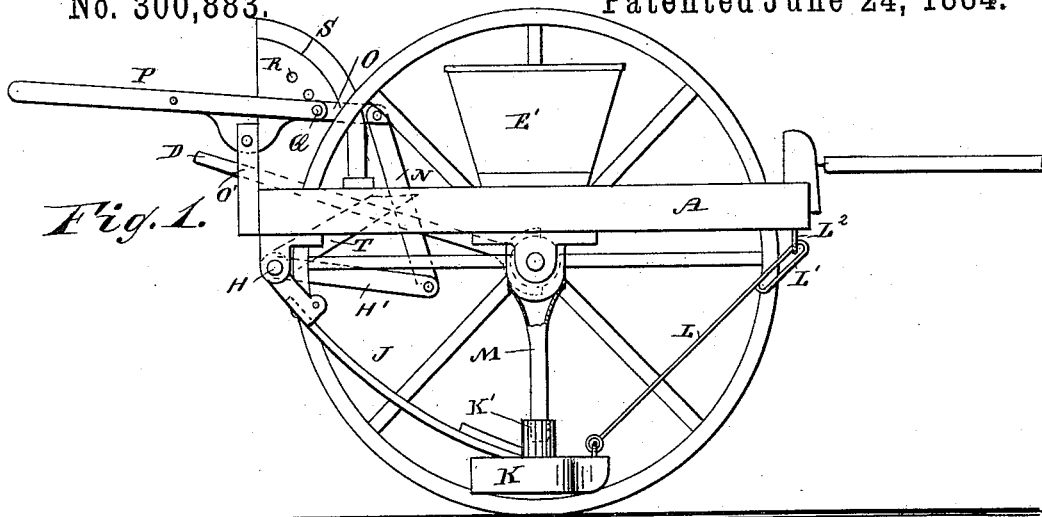


Fig. 1.

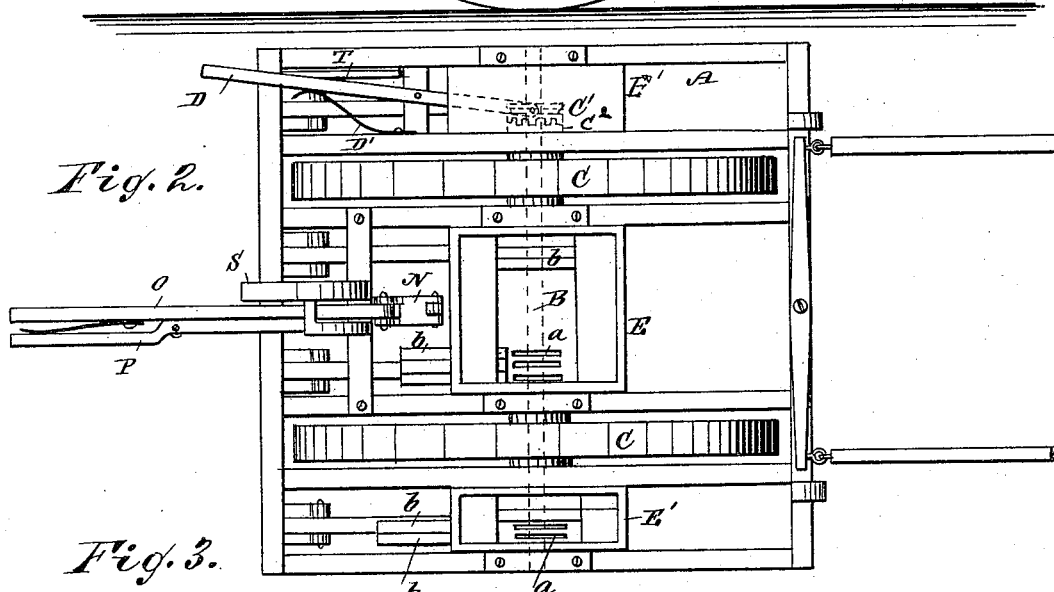


Fig. 2.

Fig. 3.

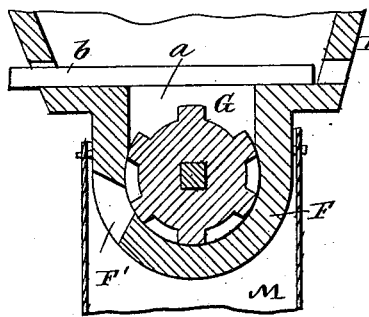


Fig. 4.

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# UNITED STATES PATENT OFFICE.

ARTHUR DE LANCEY MIDDLETON, OF CHARLESTON, SOUTH CAROLINA.

## RICE-DRILL.

SPECIFICATION forming part of Letters Patent No. 300,883, dated June 24, 1884.

Application filed February 12, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, ARTHUR DE LANCEY MIDDLETON, of Charleston, in the county of Charleston and State of South Carolina, have  
5 invented a new and Improved Rice-Drill, of which the following is a full, clear, and exact description.

My invention relates to improvements in rice or other drills; and it consists in the peculiar  
10 construction and arrangement of the parts, as hereinafter more fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming part of this specification,  
15 in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a side view of my improved rice-drill, parts being broken out and others shown  
20 in section. Fig. 2 is a plan view of the same. Fig. 3 is an enlarged longitudinal sectional elevation of the feeding device. Fig. 4 is a plan view of one of the shoes.

In a frame, A, an axle or shaft, B, is journaled, on which are loosely mounted two wheels, C, a  
25 short distance from the sides of the frame. The hub of one of the wheels is provided with a clutch-wheel, C<sup>2</sup>, adapted to engage with a clutch-collar, C', mounted on the shaft B, in such a manner that it can slide on the same,  
30 but revolves with the said shaft or axle, the collar C' being held to revolve in the forked inner end of a lever, D, pivoted on the frame A and projecting from the rear end of the same, which lever is acted on by a spring, D',  
35 which presses it in such a manner as to couple the clutch-collar C' with the clutch-collar C<sup>2</sup> on the hub of the wheel. Between the wheels C a seed-box, E, is arranged, which is provided near each end of its bottom with a series of  
40 slots, a, which can be closed by a sliding cover, b. Outside of each wheel a seed-box, E', is arranged, which is also provided in its bottom with longitudinal slots a, which can be covered by a slide, b, and all the seed-boxes can be  
45 provided with covers. Below the slots a in each seed-box a pocket, F, is provided, in which a toothed disk, G, revolves, which is mounted on the shaft B. Each pocket F is provided with an outlet-aperture, F'. In lugs  
50 projecting from the rear end of the frame A a transverse shaft, H, is journaled, on which is fixed series of spring-arms J, which are curved

and project downward and toward the front, and on the lower end of each arm a shoe, K, is secured, the front edge of which is curved  
55 upward in the same manner as a sleigh-runner, and from which shoe a tube, K', projects upward. To the front end of each shoe a rod, L, is linked, which is provided at its upper end with a longitudinal eye, L', through which  
60 a staple, L<sup>2</sup>, on the underside of the front cross-bar of the machine-frame passes. On each tube K' of each shoe the lower end of a flexible tube, M, is held, the upper end of which is held on the corresponding pocket, F, of the seed-box,  
65 through which flexible tubes M the seed passes from the seed-boxes to the shoes. The shaft H is provided with a fixed arm, H', projecting toward the front, and to the free end of the said  
70 arm a connecting-rod, N, is pivoted, the upper end of which is pivoted to the inner end of a lever, O, pivoted on a standard, O', on the rear end of the frame. A spring locking-lever, P, is pivoted on the lever O, and is provided at its inner end with a pin, Q, adapted to  
75 pass into one of a series of apertures, R, arranged in a curved line on an upright plate, S, on the frame of the machine. The shaft H is also provided at one end with a rigid arm, T, which is adapted to swing up between the  
80 lever D and the side piece of the frame A. The slides b closing the openings in the bottoms of the seed-boxes can be opened more or less according to the quantity of seed to be sowed. The seeds drop through the slots a,  
85 are carried downward by the toothed disks G, drop through the apertures F' in the boxes F, through the flexible tubes M, through the tubes K', and then through the apertures in the shoes K. If the outer end of the lever O is pressed  
90 downward, the inner end of the arm H' will be swung upward, and thereby the shoes K will be raised from the ground, and at the same time the arm T is forced up between the side piece of the frame A and the lever D, thereby  
95 pressing the outer end of the lever D inward and disengaging the clutch-collar C' from the clutch C<sup>2</sup> on the hub of the adjoining wheel C. The clutch-collar will no longer be revolved, and thus the shaft B will not be revolved, and  
100 the disks G thereon will be stationary, and will not carry any more seed into the tubes M. The rods L are provided with the longitudinal loops L' at their upper ends, to permit of raising the

shoes K in the manner described. As the springs J would be bent out of shape in case the shoes should strike a heavy obstacle, I have provided the rods L, which would prevent the shoes from being forced backward too far by the said obstacle. As soon as the shoes are lowered again, the arm T is swung downward, thus permitting the spring D' to force the outer end of the lever D outward and engage the clutch-collar C' with the clutch C<sup>2</sup> on the hub of the adjoining wheel C, whereby the feeding apparatus of the machine will be started automatically at the same time that the shoes are lowered. By means of the locking-lever P the shoes can be locked at any desired elevation. As seed-boxes are arranged outside of the wheels, the seeds can be planted along the edges of the drains or ditches.

The above-described drill can also be used for planting other seeds as well as for planting rice.

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

1. The combination, with the frame A and seed-boxes E E', of the rock-shaft H, carrying spring-arms J, shoes K, secured to the lower ends of the spring-arms J, and provided with the metallic tubes K', flexible tubes M, connecting the shoes with the seed-boxes, and rods L, secured to the front ends of the shoes and adapted to slide in keepers secured to the front

cross-bar of the frame, substantially as shown and described.

2. The combination, with the frame A, seed-boxes E E', and the seed-dropping disks G, of the rock-shaft H, spring-arms J, shoes K, connected by flexible tubes M to the seed-boxes, and provided with metallic tubes K', rods L, secured to the front ends of the shoes and sliding in keepers secured to the front cross-bar of the frame, wedge-shaped arm T on the shaft H, the spring-pressed lever D, the clutch-collar C' on the inner end of said lever, and a clutch, C<sup>2</sup>, on the hub of one of the wheels, substantially as described.

3. In a seed-drill, the combination, with the frame A, of the seed-boxes E E', the shaft B, carrying the toothed disks G, the clutch-collar C', mounted to slide on and turn with the shaft, the clutch-collar C<sup>2</sup>, formed on the hub of one of the wheels, the lever D, in the free end of which the clutch-collar is held, the spring D', the shaft H, having the rigid arm T, a lever for turning the shaft H, the spring-arms J, secured on the shaft H, the shoes K on the lower ends of the arms J, and flexible tubes connecting the seed-boxes with the shoes, substantially as herein shown and described.

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Witnesses:

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