(No Model.) 2 Sheets—Sheet 1.

J. J. McCLENDON.

ORANGE SIZER.

No. 458,061. Patented Aug. 18, 1891.

Fig. 1.

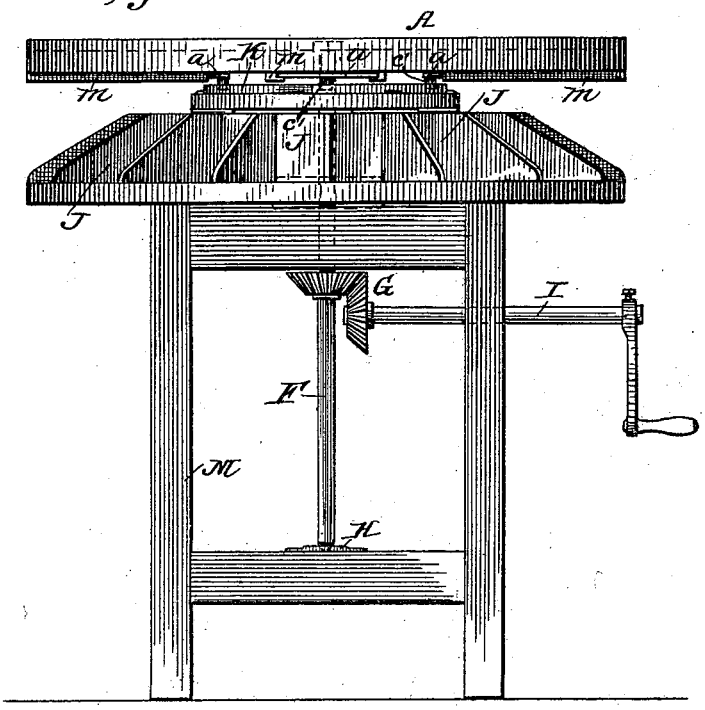
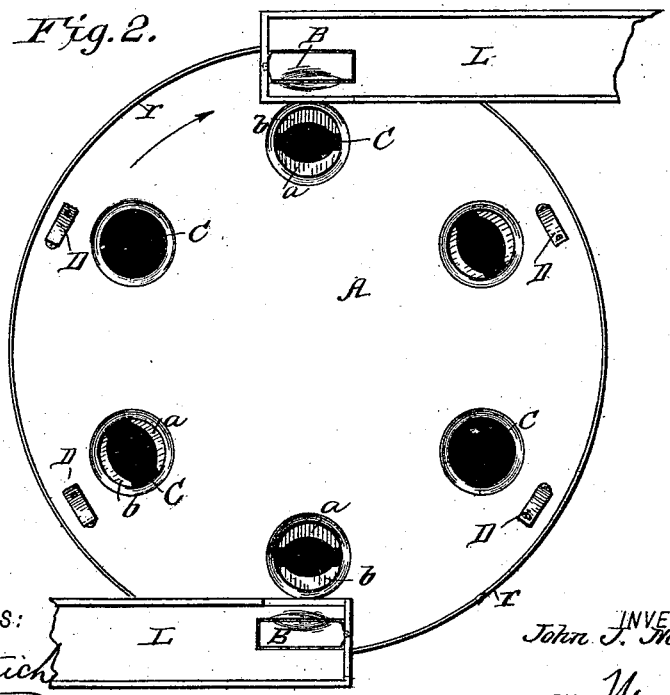


Fig. 2.



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INVENTOR:

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(No Model.) 2 Sheets—Sheet 2.

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Fig. 3.

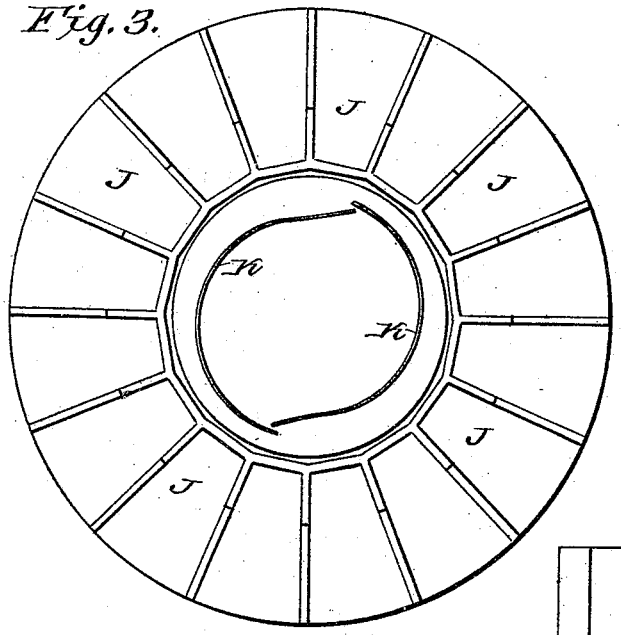


Fig. 5.

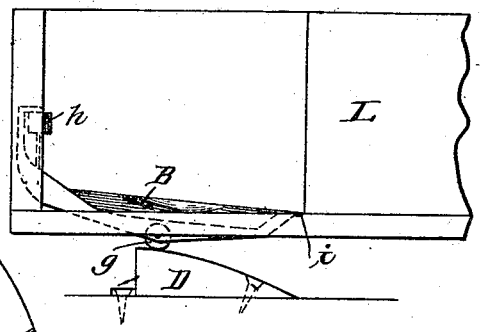


Fig. 4.

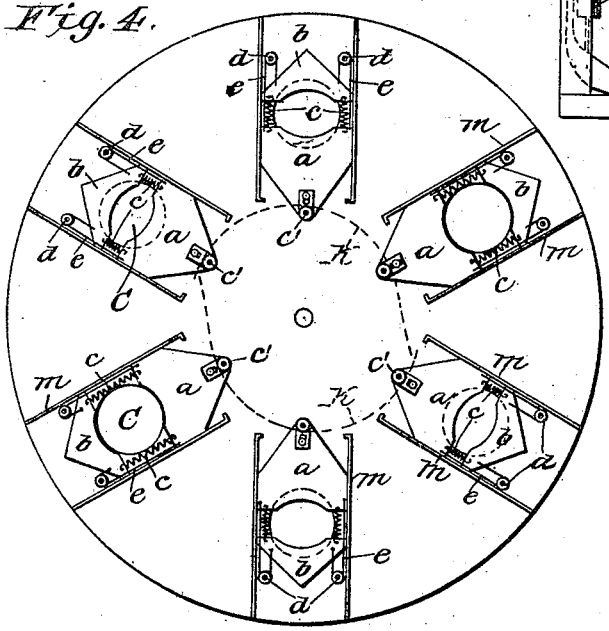
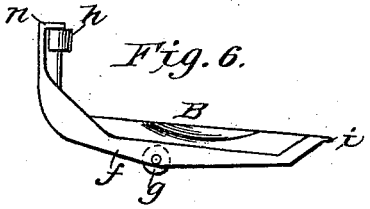


Fig. 6.



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UNITED STATES PATENT OFFICE.

JOHN JOINER McCLENDON, OF LEESBURG, FLORIDA, ASSIGNOR OF ONE-THIRD TO ROBERT R. MILAM, OF SAME PLACE.

ORANGE-SIZER.

SPECIFICATION forming part of Letters Patent No. 458,061, dated August 18, 1891.

Application filed February 3, 1891. Serial No. 379,934. (No model.)

To all whom it may concern:

Be it known that I, JOHN JOINER McCLENDON, of Leesburg, in the county of Lake and State of Florida, have invented a new and useful Improvement in Orange-Sizers, of which the following is a specification.

The object of my invention is to provide a device for separating oranges or other similar fruit or articles into grades of different sizes, and which device shall occupy but little space and shall rapidly and efficiently accomplish its work in an automatic manner.

To these ends it consists, mainly, in a rotary feed table or carrier which is provided with seats or pockets having gates or valves at their bottoms, which are gradually opened by one or more cams as the table revolves, and through which gates the oranges are dropped into subjacent compartments for the different sizes, the extent of horizontal travel on the table and the extent of opening of the gates being correlated, so that the different sizes of oranges are dropped at different points in the travel of the table into different compartments, the smaller oranges first and the larger ones successively in the order of their increased size.

It also consists in the peculiar construction and arrangement of the various parts, as will be hereinafter fully described.

Figure 1 is a side elevation of the device. Fig. 2 is a plan view. Fig. 3 is a plan view with the revolving table removed. Fig. 4 is a view of the under side of the table, and Figs. 5 and 6 are details of the feeding devices.

In the drawings, M is an upright rectangular frame-work having at H a step-bearing for a vertical rotary shaft F. This shaft is revolved by a pair of bevel-gears G and a horizontal shaft I with crank-arm. To the top of this shaft F is attached a circular table A, which revolves above a circular series of compartments J, each designed to receive oranges of one grade. There may be any number of these compartments, dependent upon the number of sizes into which the oranges are to be graded, and from these compartments, which are stationary, the oranges are to be run off into their shipping-boxes by means of separate canvas ducts or troughs, which are not shown.

A is the revolving table or carrier for the oranges, which table is provided with a circular series of holes C through it of a size sufficient to allow the largest orange to pass through. For each one of these openings upon the under side of the table is arranged a pair of gates or valves, which form seats for the oranges and are gradually opened by cams as the table revolves and allow the oranges to drop through sooner or later, according to the size of the orange and the degree to which the gates are opened. These gates consist of two sections *a b*, which close together toward the middle of the opening C by means of springs *c* and move in parallel guides *m m*. One of these sections *a* has a friction-roller *c*, which bears against the inner side of flange-cams K, which latter are attached to the stationary subjacent frame-work. As the table rotates, these stationary cams, acting upon the gate-sections *a*, cause them to be gradually opened and closed twice every complete revolution of the table. The movement of the section *a* is also made to cause a similar movement in the section *b*, which latter is connected to *a* on each side by a cord *e*, which passes around a pulley *d*, so that the two sections *a* and *b* open and shut equally on opposite sides of the center of the hole C. By this double action I get a larger range of opening for a given throw of the cam; but a gate or valve with a single section might be employed beneath each hole C.

The oranges are fed onto the table A from two inclined troughs L, whence they drop laterally into the holes C, whose upper edges are beveled or hollowed. To feed the oranges one by one into these holes there is opposite each hole C an inclined tripping-cam D, fastened to the table, designed to act upon a tilting shoe B. This shoe is fulcrumed at *i* to the trough, and has at its other end a lip *n* that rests upon an elastic stop *h*, and on the bottom of the shoe is a friction-roller *g*. As the table revolves beneath the troughs L, the tripping-cams D lift the shoes B, of the troughs whenever an opening C comes opposite them, and the surface of the shoe being inclined

or hollowed out laterally it serves to throw an orange out through the lateral opening in the trough at the proper intervals.

To prevent the oranges from rolling off the table in case any of them may not be well seated in the holes, a guard rail or rim *r* surrounds the edge of the table.

The operation of the machine is as follows: The oranges being fed one at a time into the openings C, they rest upon the gates or valves *a b* in the bottom of each opening until in the horizontal travel of the table or carrier the gates are opened sufficiently by the cams to allow the oranges to drop through into the compartments below. The smaller oranges are dropped in the early part of their travel into the compartments below, and as the table or carrier moves farther the cams, opening the gates wider, allow, successively, oranges of larger size to drop through into other compartments farther along, and thus by making the discharge-opening correlated in size to the travel of the orange on the table I am enabled to divide the oranges into as many grades of sizes as may be desired. The work is done very expeditiously, with a great economy of space and labor, and without subjecting the oranges to any bruises or abrasions which would affect their keeping qualities or fair appearance.

Having thus described my invention, what I claim as new is—

1. A sizing-machine having a traveling carrier provided with seats or pockets having adjustable discharge gates or valves correlated in their extent of opening to the travel of the carrier, substantially as shown and described.

2. A sizing-machine consisting of a rotating table having seats or pockets, discharge gates or valves for said seats or pockets, and cams for operating said gates or valves, all combined substantially as shown and described.

3. The combination of the revolving table A, having seats or pockets, gate-sections *a* and *b*, arranged upon the under side of the seats or pockets and provided with springs *c*, cords *e*, and pulleys *d* for connecting them, and the stationary cams K, substantially as shown and described.

4. The combination of the revolving table A, having seats or pockets, a supporting-shaft, with means for rotating it, gate-sections arranged upon the under side of the seats or pockets, cams for operating said gate-sections, and a circular series of compartments J, arranged beneath the table to receive and guide the fruit or other articles, substantially as shown and described.

5. The combination, with the traveling table A, having seats or pockets, with tripping-cams D arranged beside the same, of the trough L, having a tilting shoe B operated upon by the tripping-cams to feed the table, as described.

JOHN JOINER McCLENDON.

Witnesses:
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B. R. MILAM.