

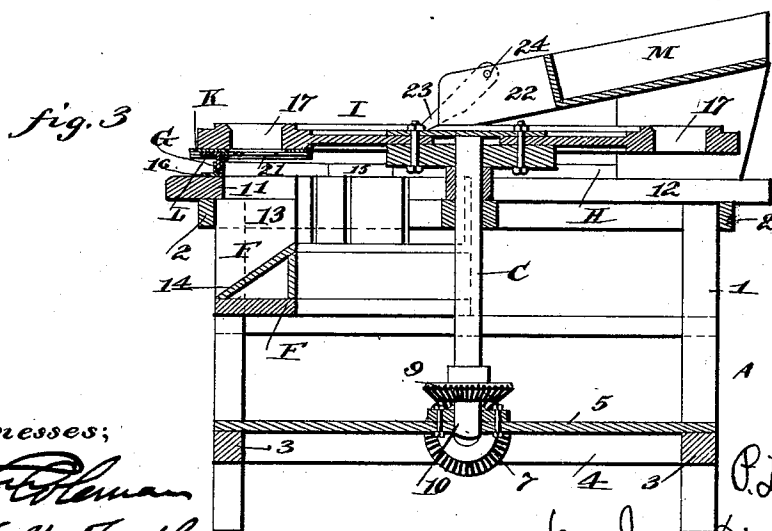
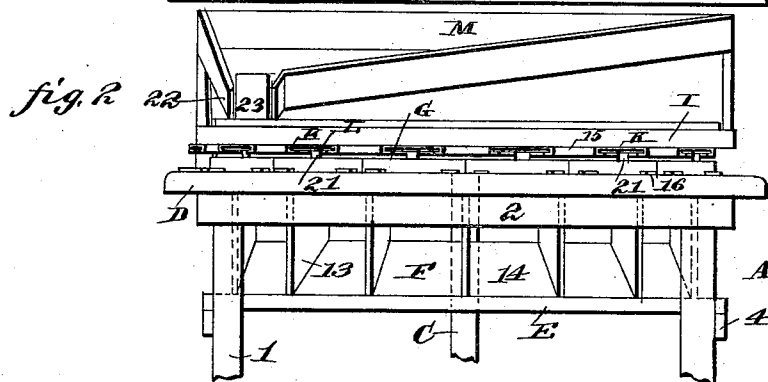
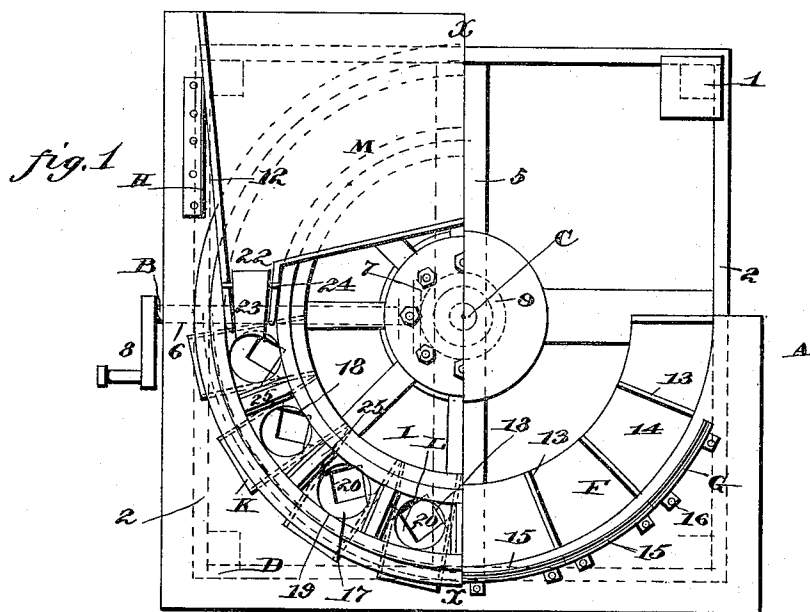
(No Model.)

2 Sheets—Sheet 1.

P. L. BILLINGSLEY.
ORANGE SORTING MACHINE.

No. 508,911.

Patented Nov. 21, 1893.



Witnesses;

J. F. Coleman
F. W. Troth.

Inventor

P. L. Billingsley

by J. C. Fitzgerald

Atty.

(No Model.)

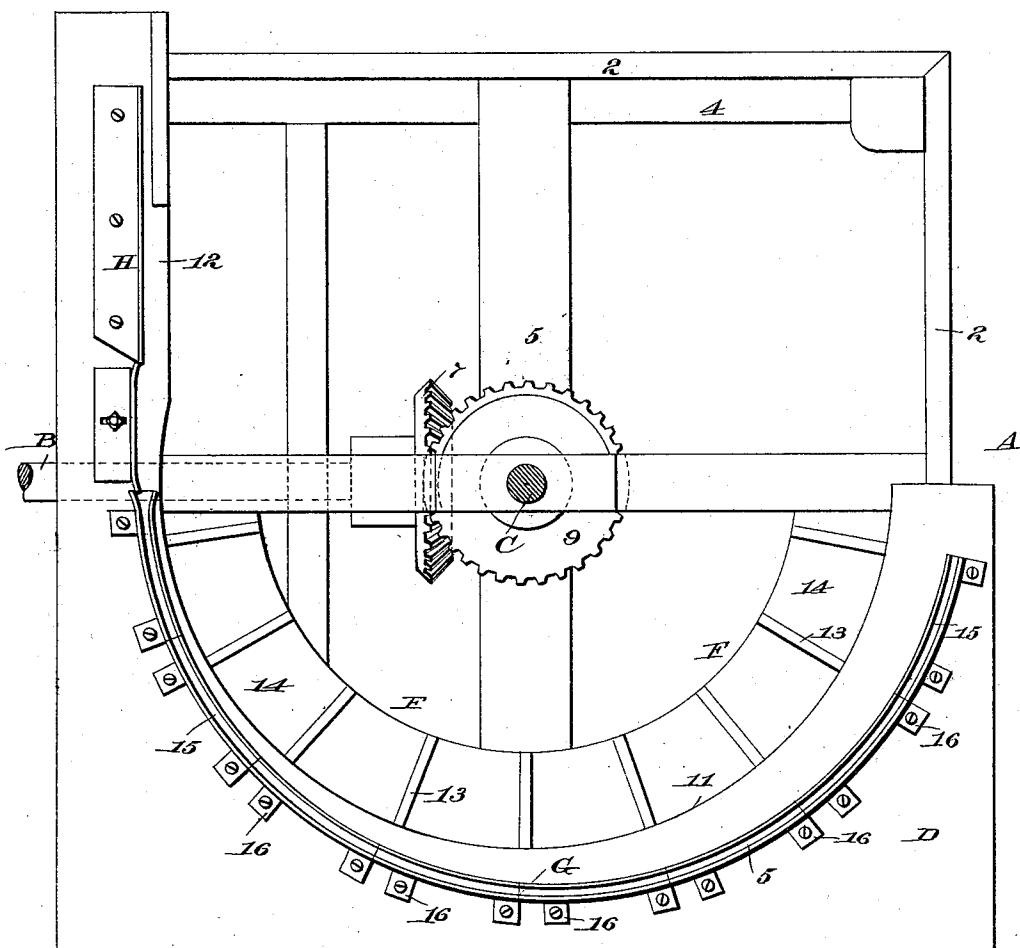
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fig. 4.



Witnesses;

J. H. Coleman
H. Jones

Percy L. Billingsley *Inventor*
by S. C. Fitzgerald

Atty.

UNITED STATES PATENT OFFICE.

PERCY L. BILLINGSLEY, OF REDDICK, FLORIDA.

ORANGE-SORTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 508,911, dated November 21, 1893.

Application filed June 13, 1893. Serial No. 477,410. (No model.)

To all whom it may concern:

Be it known that I, PERCY L. BILLINGSLEY, a citizen of the United States, residing at Reddick, in the county of Marion and State of Florida, have invented certain new and useful Improvements in Orange-Sorting Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in orange-sorting, sifting, or grading machines.

The invention will first be described in connection with the accompanying drawings, and then particularly pointed out in the claims.

In the drawings—Figure 1 is a top-plan view of a machine embodying my invention, showing one-half of hopper and distributing wheel removed. Fig. 2 is a front view of Fig. 1. Fig. 3 is a transverse sectional view on line $x-x$ of Fig. 1. Fig. 4 is a plan view of the machine, with the hopper and distributing wheel removed, showing the eccentricity of the grooved track, and also, the straight closing rail.

Referring to the drawings, A is a framework, consisting of corner-posts 1, plates 2, front and rear cross-braces 3, and bearing braces 4. A step-brace 5 extends from the front to the rear cross-brace, as shown.

In the bearing-braces 4 is mounted a revoluble driving-shaft B, journaled at 6, and provided at its inner end with a bevel gear-wheel 7, its outer end being provided with a crank 8, or other suitable device for imparting motion to the machine. The gear-wheel 7 meshes into a bevel pinion 9 fixed to a vertical shaft C, which is stepped at 10 on the step-brace.

On top of the plates 2 is secured a top D, having a semicircular inner edge 11 and a straight extension 12. A short distance below the top is secured a shelf E at the front of the machine, on which shelf is located a series of pockets F, consisting of partitions 13 and slanting bottom pieces 14.

To the top of the table is secured a grooved track or channel G, preferably consisting of a series of segments 15, each secured to the table by lugs or feet 16 through which screws or bolts may be passed. This track or channel is located eccentrically with regard to the

central axis of the vertical shaft C. A straight closing-rail H is secured to the top of the table on the extension 12.

To the top end of the vertical shaft C is secured a distributing-wheel I, which has a series of circular dropping-holes 17, and below each hole is secured a slideway K, having a central opening, V-shaped at one end, as at 18, and semicircular at the other end, as at 19. The V-shaped portion 18 projects across and limits the size of the circular opening 17, while the semicircular portion 19 is flush with the side of its respective dropping opening or hole. A slide or gate L is located in the slideway K and arranged to move in or out in a radial direction with relation to the distributing wheel, the inner end of each slide or gate being V-shaped, as at 20, and adapted to project across the circular opening. The bottom of each slide L has a downward-extending lug 21, arranged to enter the grooves in the track G.

At the rear of the machine is placed a hopper M, of any suitable shape and provided with an outlet-spout 22 in which is located a gate 23 pivoted at 24 the end of which extends beyond the end of the spout and rests on the end of the bottom of the spout and top of the distributing-wheel until struck by one of the radial strips 25, secured to the top of the distributing-wheel between the dropping-holes.

The operation of my apparatus is as follows: The hopper M is filled with oranges to be sorted. The machine being set in motion by power applied to the driving-shaft, the distributing-wheel is revolved, and as each radial rib or strip 25 comes around it contacts with, and swings outward, the pivoted gate or cut-off 23 thus allowing the oranges to drop out, one at a time, into the dropping-holes, each orange being prevented from falling through the hole by the V-shaped portion of the slideway K and by the V-shaped portion 20 of the gate L, which at the point below the hopper is closed to its extreme limit. As the wheel rotates it carries the oranges around with it, and as the lug 21 moves in the grooved track G, which, being eccentric to the wheel, keeps increasing in distance from the center of the wheel, the slide or gate L is gradually drawn out, thus increasing the

size of the opening between its inner end and the V-shaped portion 18, of the slideway K; when this opening becomes sufficient in size, the orange drops through into one of the 5 pockets below, from whence it rolls down the inclined bottom into suitable receptacles.

From this description it will be apparent that as the wheel revolves the slides or gates are gradually drawn out to their extreme out- 10 ward limit by the grooved track. The wheel still revolving carries the lugs clear of the grooved track, which does not extend all the way around, and a further movement of said wheel brings the lugs around into contact 15 with the straight closing-rail H, which forces the slide inward again, thus closing the openings and allowing the lugs to enter the groove in the track at the beginning of the spiral.

The number of pockets and the eccentric 20 arrangement of the track may be varied as desired, according to the number of gradations of the oranges that may be necessary.

Having thus fully described my invention, what I claim as new, and desire to secure by 25 Letters Patent, is—

1. In an orange sorter, the combination, with a distributing wheel provided with dropping openings, a slideway secured to the wheel directly under each of the said openings, an 30 opening in the slideway one half of which conforms in size and shape to the dropping openings, the other half being angular, partly

closing the dropping openings, a gate having a V-shaped opening in its inner end and sliding in each slideway and a depending lug on 35 the outer end of said gate, of a grooved guide rail secured to the table eccentric to the distributing wheel and extending partly around the table, and a straight closing rail situated 40 between the ends of the guide rail, the depending lugs engaging first the curved guide rail and then the straight closing rail, as the distributing wheel revolves, substantially as shown and described.

2. In an orange sorter, the combination, 45 with a revoluble distributing wheel having a series of dropping openings, and a series of radial ribs secured to the upper side thereof between said openings, of a hopper located 50 above the wheel and provided with a spout, a pivoted gate in the spout, the free end of which rests normally on the end of the bottom of the spout and the top of the wheel between the radial ribs and arranged to be 55 raised by contact with the ribs as the wheel revolves substantially as described and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

PERCY L. BILLINGSLEY.

Witnesses:

JNO. W. FIFE,
ED. RURE.