(No Model.)

J. PORTEOUS.

RAISIN GRADER.

No. 421,881. Patented Feb. 18, 1890.

Fig. 1.

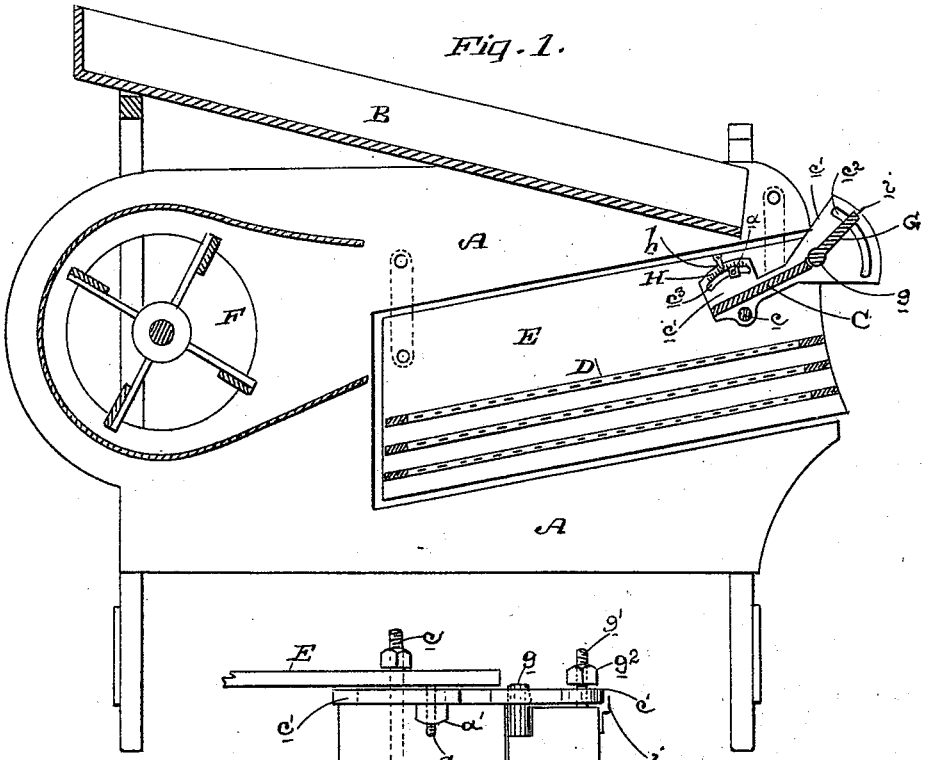


Fig. 2

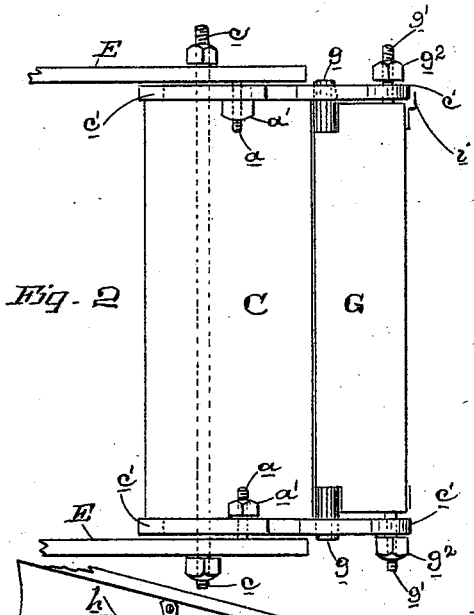
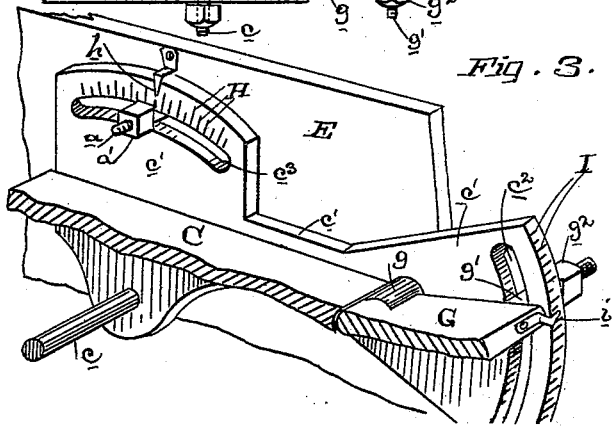


Fig. 3.



Witnesses,
[illegible]

Inventor,
James Porteous
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UNITED STATES PATENT OFFICE.

JAMES PORTEOUS, OF FRESNO, CALIFORNIA.

RAISIN-GRADER.

SPECIFICATION forming part of Letters Patent No. 421,881, dated February 18, 1890.

Application filed November 27, 1889. Serial No. 331,784. (No model.)

To all whom it may concern:

Be it known that I, JAMES PORTEOUS, a citizen of the United States, residing at Fresno, Fresno county, State of California, have invented an Improvement in Raisin-Graders; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to that class of graders for raisins, grapes, and other similar material in which the fruit is fed down from a suitable chute upon an inclined directing-board, adjustable to various inclinations, and thence upon a series of shaking screens or sieves, a blast of air being directed onto the board, whereby the stems are blown out, while the fruit falls back down the board upon the sieves.

My invention consists in the novel improvement in the directing-board hereinafter fully described, and specifically pointed out in the claims.

The object of my invention is to render the cleaning portion of the machine more sensitive and accurate in its operation, adapting it to be so adjusted as to be easily regulated to the peculiar condition or circumstances of the material being passed through, and to be accurately set again to suit the same conditions or material.

Referring to the accompanying drawings for a more complete explanation of my invention, Figure 1 is a vertical longitudinal section of a raisin-grader, showing the application of my improvement. Fig. 2 is a plan view of improvement. Fig. 3 is a perspective detail, showing one side.

A is the frame of the machine, having supported in its top the inclined feed-chute B, the lower end of which is in communication with a downwardly-inclined directing-board C, adapted to discharge the material upon the series of sieves or screens D in the shaking-shoe E.

F is a fan in the rear of the machine and adapted to direct a blast upon the directing-board, so as to blow the stems of the fruit forwardly from said board.

The board C is an adjustable one—that is to say, it is so arranged upon a transverse bolt *c* that it can be changed to different inclinations, being set in any given inclination by tightening up the nut on the end of the bolt. The board as far as described is the common one in this class of machines, and its operation is the same—namely, that by reason of its inclination the fruit is directed downwardly against the blast of air upon the sieves, while the stems are blown forwardly and upwardly off said board, and by changing its inclination this effect is varied according to the condition of the material being passed through the machine, or according to the nature of the material itself.

The chief novelty in my present invention is the attachment to the forward or upper end of the directing-board C of a supplementary adjustable board G, so connected with the main board that it may be independently varied as to its inclination. This attachment may be formed by any suitable hinge-joint, here shown by the rounded back edge of the supplementary board fitting in the concave forward edge of the main board, and side extending pins *g*, passing through the side flanges *c'* of the main board, thus forming the hinge. The supplementary board may be held in any position to which it may be turned by means of a bolt *g'*, which passes through a curved slot c^3 in the side flanges of the main board and receives a nut g^2 on its outer end.

Another point of novelty in the invention is in the side flanges *c'* of the main directing-board, having upon their upper edges, at their back portions, graduations or marks, (represented by H,) which play past a fixed pointer *h* upon the side of the main frame, thereby enabling the operator to tell exactly the inclination of his board, and to set his board to the same inclination as on a previous operation, or to that inclination which is deemed the best, as may be desired. In order to guide and hold the board more effectively, I may make in the said flanges *c'* the curved slots c^3, through which pass from the sides of the main frame the bolts *a*, having nuts *a'* upon their inner ends. These serve as guides and also as more effective means, and more obvious ones, for fixing the main board at any inclination desired and holding it there. Upon the forward end of the flange *c'* are made marks or graduations I, which are indicated by a pointer *i* on the board G, so as to know the inclination of said board. The object of

this supplementary board is, broadly stated, to render the cleaning action of the device more accurate and sensitive. The material, according to its condition, whether wet or dry, or according to its nature, needs to be operated upon differently. Some materials, or in some conditions, need the board to be set at a greater angle in order to prevent the fruit itself from being blown off, while other conditions or other materials require it at a less angle, as the fruit itself will not be blown off, but only the stems. I have found by actual experience that while the main directing-board C serves this purpose to a certain extent its action can be rendered far more accurate by means of the supplementary board G, which by being turned to a different angle from the main board further regulates the effect of the blast of air in the operation of the machine. There is, therefore, in reality a double adjustment, the second being due to the supplementary board, by which a nicer and more sensitive action may be had and the operation regulated more accurately.

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

1. In a raisin-grader, the combination of the pivoted main directing-board C, adapted to be adjusted to different inclinations and having slotted side flanges, and the supplemental board hinged to the forward edge of the main board, and having its free end adjustably held between the slotted side flanges of the main board, whereby said supplemental board may be adjusted independently of the main board.

2. In a raisin-grader, the combination of the main directing-board having side flanges, the supplemental board having pintles journaled in said flanges just in front of the main board, and a set-screw or bolt carried by said supplemental board and extending through slots in the side flanges of the main board, whereby said supplemental board may be turned with and independently of the main board, substantially as described.

3. In a raisin-grader, the adjustable directing-board C, having the side flanges c', the forward ends of which are provided with curved slots, in combination with the supplementary board at the forward end of the board C and hinged between its side flanges, the bolts of said board passing through the slots of said flanges, and the nuts on the bolts, substantially as herein described.

4. In a raisin-grader, the shoe E and the inclined adjustable directing-board C, in combination with the side flange c' of said board graduated or marked, and the fixed pointer by which the said flange plays, whereby the inclination of the board may be determined, substantially as herein described.

5. In a raisin-grader, the shoe E and the inclined adjustable directing-board C and the transverse securing-bolt on which it is mounted, in combination with the side flanges of said board, having at their rear ends the curved slots, the bolts passing through said slots, and the nuts on the bolts, substantially as herein described.

6. In a raisin-grader, the shoe E and the adjustable inclined directing-board C, having the side flanges c', with curved slots in their forward ends and graduated or marked, as shown, in combination with the supplementary board hinged between the side flanges at the forward end of the board C, the bolts and nuts of said board, and the pointer, whereby its inclination is determined, substantially as herein described.

7. In a raisin-grader, the frame thereof, the inclined feed-chute in its top, the series of sieves, and the fan, in combination with the inclined adjustable directing-board C, mounted in the forward end of the frame under the feed-chute and adapted to receive the blast of air, said directing-board having slotted side flanges, and the supplementary board G, journaled in said side flanges at the forward end of the main board, and adapted to be independently turned to different inclinations, said supplementary board having a set-screw or bolt playing in slots in the forward portion of the flanges, substantially as herein described.

In witness whereof I have hereunto set my hand.

JAMES PORTEOUS.

Witnesses:
S. H. NOURSE,
H. C. LEE.