W. C. ANDERSON.

RAISIN STEMMER.

APPLICATION FILED FEB. 13, 1909.

962,609. Patented June 28, 1910.

3 SHEETS—SHEET 1.

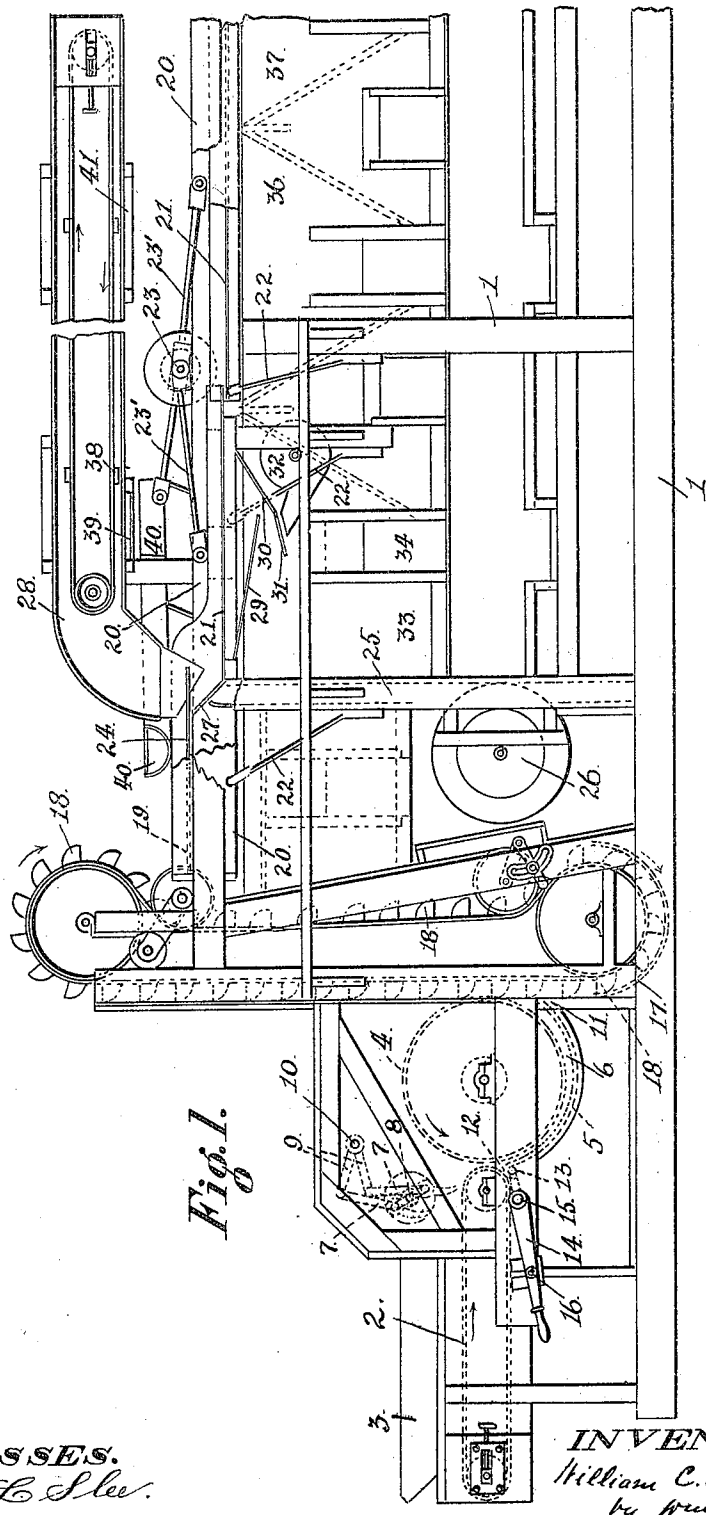


Fig. 1.

WITNESSES.
Arthur L. Slee.
S. Constantine.

INVENTOR.
William C. Anderson
by Wm. F. Booth
his Attorney.

W. C. ANDERSON.

RAISIN STEMMER.

APPLICATION FILED FEB. 13, 1909.

962,609.

Patented June 28, 1910.

3 SHEETS—SHEET 2.

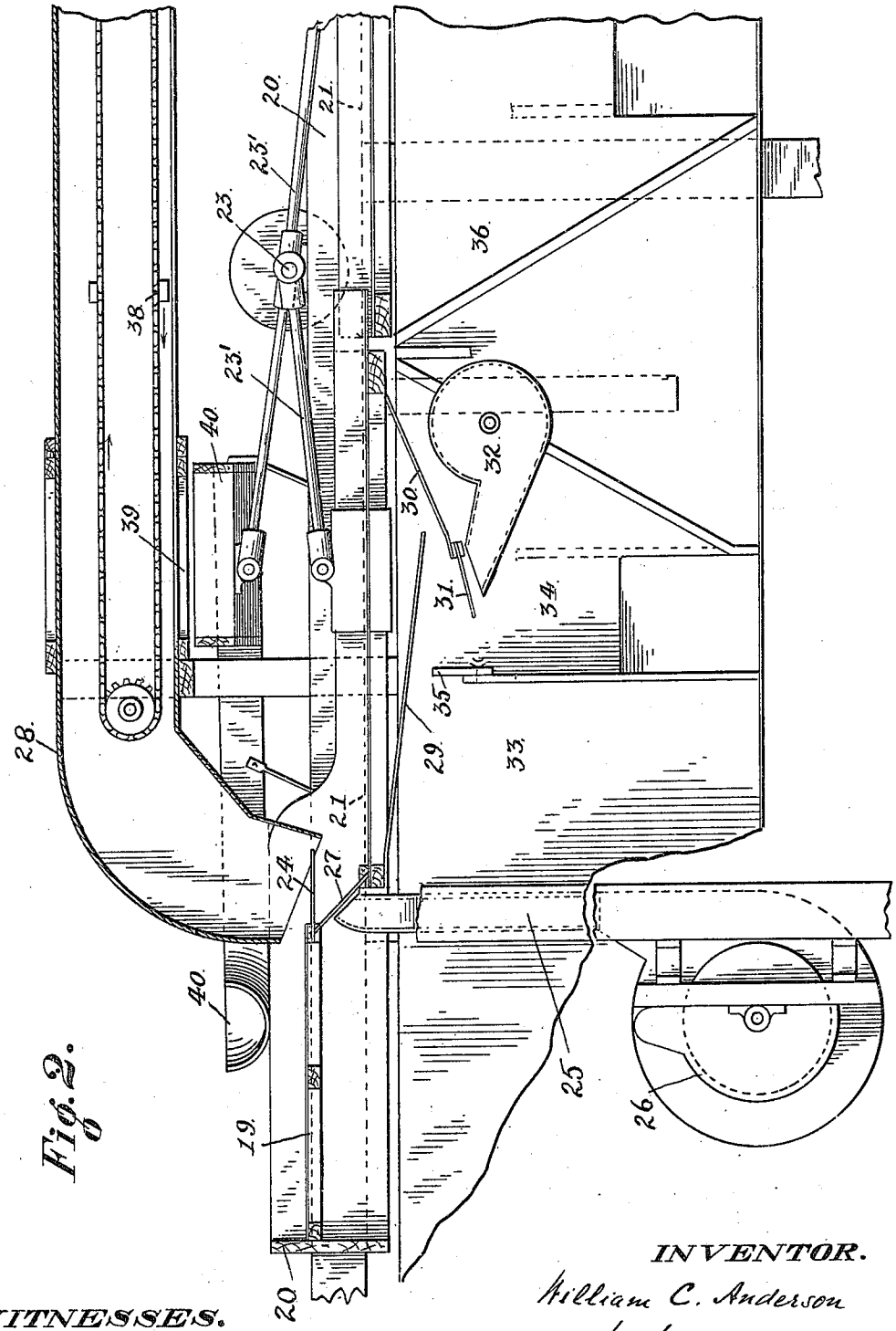


Fig. 2.

WITNESSES.

Arthur L. Slee.

S. Constine.

INVENTOR.

William C. Anderson

by Wm F. Booth

his Attorney.

ANDREW B. GRAHAM CO., PHOTO-LITHOGRAPHERS, WASHINGTON, D. C.

W. C. ANDERSON.

RAISIN STEMMER.

APPLICATION FILED FEB. 13, 1909.

962,609. Patented June 28, 1910.

3 SHEETS—SHEET 3.

Fig. 3.

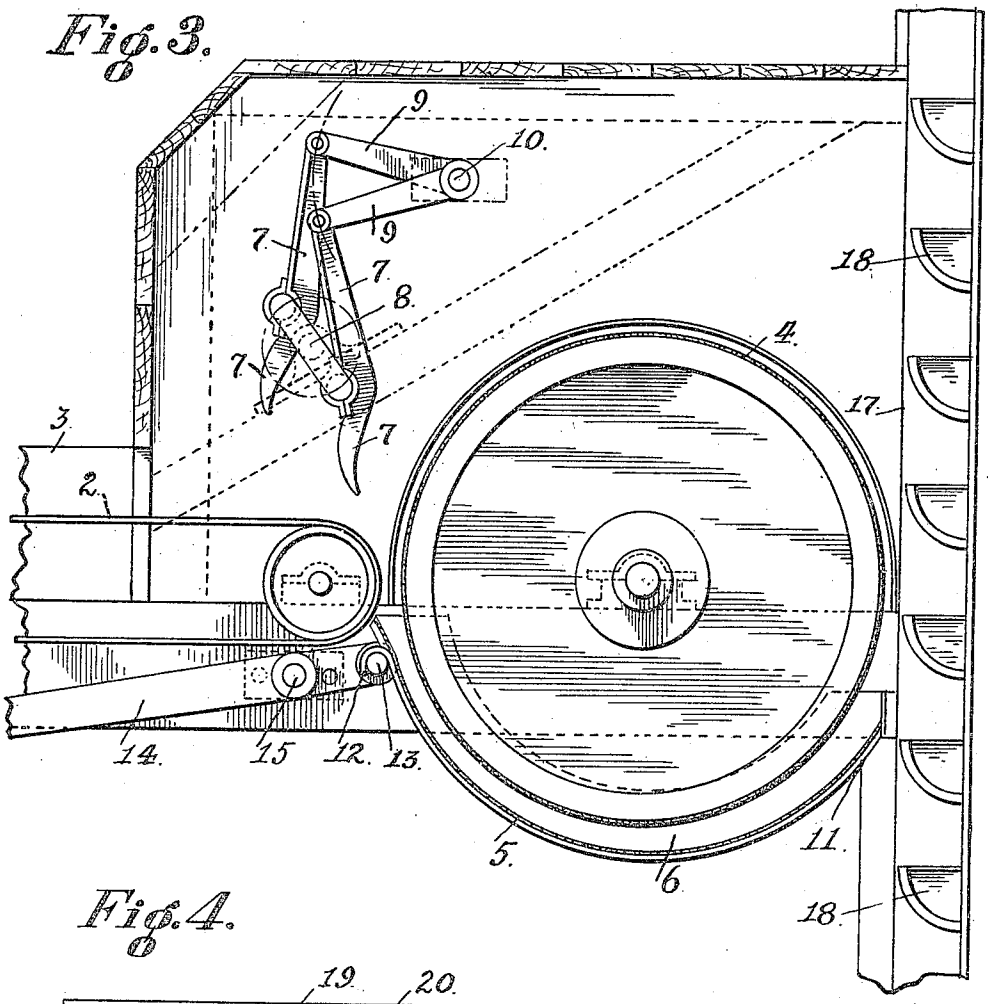
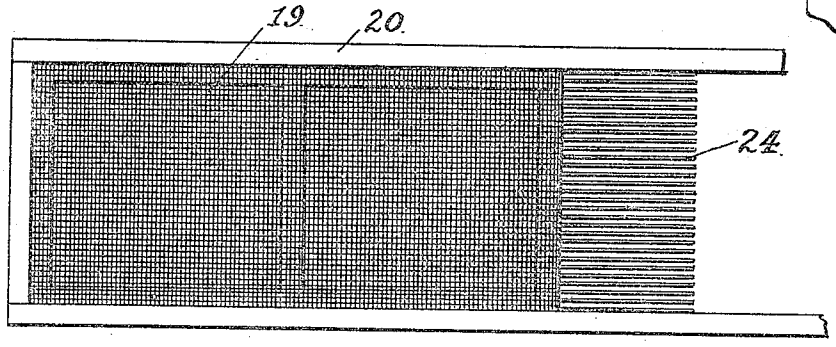


Fig. 4.



WITNESSES.

Arthur L. Slee.

S. Constine.

INVENTOR.

William C. Anderson

by Wm F. Booth

his Attorney.

ANDREW B. GRAHAM CO., PHOTO-LITHOGRAPHERS, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

WILLIAM C. ANDERSON, OF SAN JOSE, CALIFORNIA.

RAISIN-STEMMER.

962,609. Specification of Letters Patent. Patented June 28, 1910.

Application filed February 13, 1909. Serial No. 477,501.

To all whom it may concern:

Be it known that I, WILLIAM C. ANDERSON, citizen of the United States, residing at San Jose, in the county of Santa Clara and State of California, have invented certain new and useful Improvements in Raisin-Stemmers, of which the following is a specification.

My invention relates to the class of raisin-stemmers. Its object is to thoroughly remove both the large or cluster-stems, and the small or cap-stems, and separate them from the raisins, so that the latter may be graded clean.

This object is attained, first, by subjecting the raisins, while on a feed conveyer to which they are supplied direct from the sweat-boxes, to the action of a set of fingers, the effect of which is to take off the cluster-stems by breaking up the bunches, and to distribute and spread the raisins out equally as they are about to enter between the cylinder and concave; second, by passing the raisins through a novel stemming-space in which they advance with no tendency to clog or roll up to their injury, and in which the cap-stems are removed; third, by subjecting the raisins, stems and all, to the novel action of a wind-controlled separating device, by which the stems are removed; and, finally, by conducting the stemmed raisins to their grading destination.

To accomplish these operations, my invention consists in the novel raisin-stemmer, and in its several arrangements, constructions and combinations, particularly pointed out in the appended claims and which I shall now fully describe, by reference to the accompanying drawings, in which—Figure 1 is a side elevation of my machine. Fig. 2 is a side view, enlarged, partly in section of the wind-controlled separating devices. Fig. 3 is a side view, enlarged, showing the set of breaking and distributing fingers, the novel stemming space between cylinder and concave, and the feed conveyer thereto. Fig. 4 is a plan view, enlarged, showing the first receiving table and grating.

1 is the general frame of the machine.

2 is a traveling feed-conveyer, upon which the raisins from the sweat-boxes are dumped.

3 are side guides of the conveyer.

4 is the stemming cylinder of the usual wire-cloth or screen covered pattern, and 5 is the concave, of the same screen or wire-cloth type.

6 is the stemming space between the cylinder and concave.

Above the feed-conveyer, just in advance of where it delivers the raisins to the stemming space is a set of fingers 7, which from their functions, may be termed "breaking and distributing fingers." These fingers, as shown in Fig. 3, are connected with the several cranks of a shaft 8, from which they derive their peculiar movement. Each finger extends above its crank connection, and its upper end is jointed to a link 9, the other end of which has a fixed pivot at 10, all the links being pivoted in this line. The lower ends of the fingers play, at their lower limit, above the feed-conveyer, and engage and act upon the mass of raisins. The movement of the fingers, thus mounted is one which carries their lower ends forwardly and downwardly to the raisins; thence backwardly toward the cylinder, and thence upwardly away from the raisins, for a repetition of their stroke.

The raisins fed to the conveyer 2 from the sweat-boxes, lie in irregular measses and bunches thereon, until they reach the fingers 7. By the novel action of these fingers, these masses are at once engaged with a two-fold effect, namely, to break up the bunches, and tear away their cluster-stems, and, incidentally, many of their cap-stems, and to spread out and distribute the masses in an even comparatively thin layer, fit to enter the cylinder-concave stemming space 6. The novel feature of this space 6 is that it gradually increases in depth from its receiving to its discharge end, as seen clearly in Fig. 3. This arrangement is the result of setting the receiving end of the concave closer to the cylinder than its delivery end. A good construction which permits of various adjustments, and the removal of the concave to clean it, is that here shown. The delivery end of the concave merely rests at 11 upon the frame work, as seen in Fig. 3. Its receiving end has a hook 12 which is engaged and supported by a pin 13 in the end of a lever 14 pivoted at 15. The position of the lever is controlled by a set nut 16, seen in Fig. 1. By adjusting the position of the lever, the receiving end of the

concave may be brought closer to or carried farther from the cylinder. When necessary to remove the concave entirely, it can readily be unhooked from the pin 13 by dropping the engaging end of the lever 14 sufficiently. This arrangement of the concave relatively to the cylinder, so that the receiving end of the stemming space 6 is shallower than its delivery end, is the reverse of that heretofore deemed necessary in raisin-stemmers employing cylinders and concaves. In the usual practice it is customary to shovel the raisins into the concave, so that a wide entrance mouth is necessary, especially as the raisins are then in unstemmed masses and would not enter a narrow space. Also, in order to subject them, in the concave, to the friction of the opposing screen surfaces, necessary to remove their stems, the stemming space has heretofore grown narrow toward its delivery end, which has the effect of rolling up the mass to the injury of the raisins, and the imperfect removal of their stems due to the rolled masses.

By my construction, with the preliminary action of the fingers which breaks up and smooths out the raisin mass, I am enabled to feed, by means of a conveyer, a comparatively narrow stemming space, and attain, at once, the necessary friction, applied under the most favorable circumstances; and as the material advances, it gets freer and freer, as it should, in order to reach all its parts, until it is delivered without any tendency to clog and without injury to the raisins.

The stemming space 6 delivers into an elevator casing 17 in which operates a bucket elevator 18, by which the material, stems and all, is carried up and discharged upon a receiving table 19 in the head end of a shaking shoe 20, having a screen bottom 21, indicated in Fig. 2 by the dotted line.

The receiving table 19 is best made of a fine screen, as shown in Fig. 4, so that a separation of sand and very fine matter may take place at this point, said sand dropping down through the screen bottom of the shoe lying under the table 19 and being received in an underlying compartment.

The shoe 20 is best made in two overlapping sections supported by springs 22, as seen in Fig. 1, the inclination of which is such as to advance the material under the shaking action. The screen bottom 21 extends through both sections, and a shaking movement is imparted to the shoe by means of a crank shaft 23 and connecting rods 23′.

At the delivery end of the receiving table 19 is a grating 24 made up of parallel spaced rods or strips, Fig. 4, which deliver to the screen bottom 21. Below this grating is the wind trunk 25 of a fan 26, and across the mouth of the wind trunk, directly under the grating 24 is a second grating 27 on an incline, and which also delivers to the screen bottom. Directly over the grating 24 is the open end of the stem-box 28, which extends along the top of the machine, above the shaking shoe 20. Now, as the material, delivered to the receiving table 19, advances under the shaking movement of the shoe, and gets upon the grating 24, it is met by a strong uprising blast of wind from fan 26, which has the effect of blowing the stems upwardly into the stem box 28, while the raisins pass on to the screen bottom of the shoe. The advantage of thus presenting the material while supported on the grating, to the wind action, is that the blast affects it before it begins to fall. The stems are thus, at once, lifted from a position of horizontal rest and they are lifted more readily and effectually than if they were falling at the time the blast struck them. The underlying second grating 27 merely insures against any materials getting down into the wind-trunk. The screen bottom 21 of the shaking shoe is the usual grader bottom. Through its portion nearest its head the smallest raisins, or those termed "seedless" pass. As it is desirable to more thoroughly clean this grade, I provide for a second separation of their detached stems, by receiving them upon a table 29, which delivers them to a table 30, which in turn delivers them to a grating 31. In passing over this grating they are subjected to the blast of a second fan 32, the effect of which is to blow the remaining stems and light chaff over into a compartment 33, while the cleaned raisins drop into a compartment 34 for delivery into boxes. An adjustable wall 35 regulates this separation. See Fig. 2. After passing the first portion of the screen bottom of the shaking shoe, the next grade of raisins, known as "2 crown" fall through into an underlying chute 36 for delivery into boxes. Similarly with "3 crown" in the next chute 37, and so too with "4 crown", the disposition of which, for want of space, is not here shown. Some raisins, under the action of the blast from the first fan 26, will be blown up with the stems into the box 28. Most of these falling from the current will drop near the beginning of the box; others will drop farther along in the box. In the box is an endless traveling scraper 38 which will return all the raisins to a screened drop opening 39 in said box near its head end. These raisins might be returned directly to the screen bottom, but it is best to return them through a shaking shoe 40 to the receiving table 19 in advance of the main blast, so that they will have the benefit of a second cleaning. A second drop opening 41 near the end of the stem box will discharge any small raisins of slight or no value which may pass on to that point. This discharge takes place beyond the end of the machine, it being understood from the "broken" wind

box in Fig. 1, that said box extends far enough to carry its opening 41 beyond the end of the machine.

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

1. In a raisin-stemmer, the combination of a stemming cylinder and an opposing stemming concave so arranged with relation to the cylinder that the stemming space between them is shallowest at its receiving end and thence gradually deepens to its delivery end, a conveyer to receive the raisins and feed them to the concave, and means to act on the raisins while on the conveyer to separate and distribute the material in advance of the cylinder and concave.

2. In a raisin-stemmer, the combination of a stemming cylinder, and an opposing stemming concave so arranged with relation to the cylinder that the stemming space between them is shallowest at its receiving end and thence gradually and continuously deepens to its delivery end.

3. In a raisin-stemmer, the combination of stem detaching devices, means for presenting the raisins and stems, delivered from the stem detaching devices, to the action of a blast of air, an open-ended stem-box to receive the air-blast with its accompanying stems, and means for advancing the raisins out of the sphere of the air blast.

4. In a raisin-stemmer, the combination of stem detaching devices, a grating constructed and arranged to receive and support the raisins and stems after passing through the stem detaching devices, means for directing a blast of air upwardly through the grating supporting the raisins and detached stems, and an overlying box into which the stems are carried by the blast.

5. In a raisin-stemmer, the combination of stem detaching devices, a grating constructed and arranged to receive and support the raisins and stems after passing through the stem detaching devices, means for directing a blast of air upwardly through the grating supporting the raisins and detached stems, an overlying box into which the stems are carried by the blast, and means for advancing the raisins out of the sphere of the air blast.

6. In a raisin-stemmer, the combination of stem detaching devices, a shaking shoe with a table at its head end to receive the raisins and stems delivered from the stem detaching devices, and to advance them, a grating at the end of said table to receive and support them, a wind-trunk and fan below said grating, and an open ended stem box above said grating to receive the air blast and accompanying stems.

7. In a raisin-stemmer, the combination of stem detaching devices, a shaking shoe with a table at its head end to receive the raisins and stems delivered from the stem detaching devices, and to advance them, a grating at the end of said table to receive and support them, a wind-trunk and fan below said grating, an open ended stem box above said grating to receive the air blast and accompanying stems, and a bottom in said shoe to receive and advance the raisins to their destination.

8. In a raisin-stemmer, the combination of stem detaching devices, a shaking shoe with a table at its head end to receive the raisins and stems delivered from the stem detaching devices, and to advance them, a grating at the end of said table to receive and support them, a wind-trunk and fan below said grating, an open ended stem box above said grating to receive the air blast and accompanying stems, an auxiliary grating extending over the outlet of the wind-trunk, and said shoe having a bottom to receive and advance the raisins to their destination.

9. In a raisin-stemmer, the combination of stem-detaching devices, a shaking shoe with a table at its head end to receive the raisins and stems delivered from the stem-detaching devices, and to advance them, a grating at the end of said table to receive and support them, a wind-trunk and fan below said grating, an open-ended stem box above said grating to receive the air blast and accompanying stems, a screen bottom of the shoe to receive the raisins from the table, a second table in the shoe under said screen bottom, to receive the raisins dropping through, a second grating to which the raisins are delivered from the table, and a second fan to deliver a blast of air upon the raisins on the second grating to further separate the stems.

10. In a raisin-stemmer, the combination of stem detaching devices, a shaking shoe with a table at its head end to receive the raisins and stems delivered from the stem detaching devices and to advance them, a grating at the end of said table to receive and support them, a wind-trunk and fan below said grating, an open ended stem box above said grating to receive the air blast and accompanying stems, a bottom in the said shoe to receive and advance the raisins to their destination, a traveling scraper in the stem box to return such raisins as may be blown therein, and means for delivering said raisins back to the shaking shoe.

11. In a raisin-stemmer, the combination of a stemming cylinder, an opposing stemming concave, so arranged with relation to the cylinder that the stemming space between them is shallowest at its receiving end and thence deepens to its delivery end, and means for adjusting the concave relatively to the cylinder to vary said space, said

means including a lever pivoted to the frame, a connection between one end of the lever and the receiving end of the concave, and a device to engage the other end of the lever and hold the lever in various positions of adjustment.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM C. ANDERSON.

Witnesses:
WM. F. BOOTH,
D. B. RICHARDS.