A. H. PARKS.

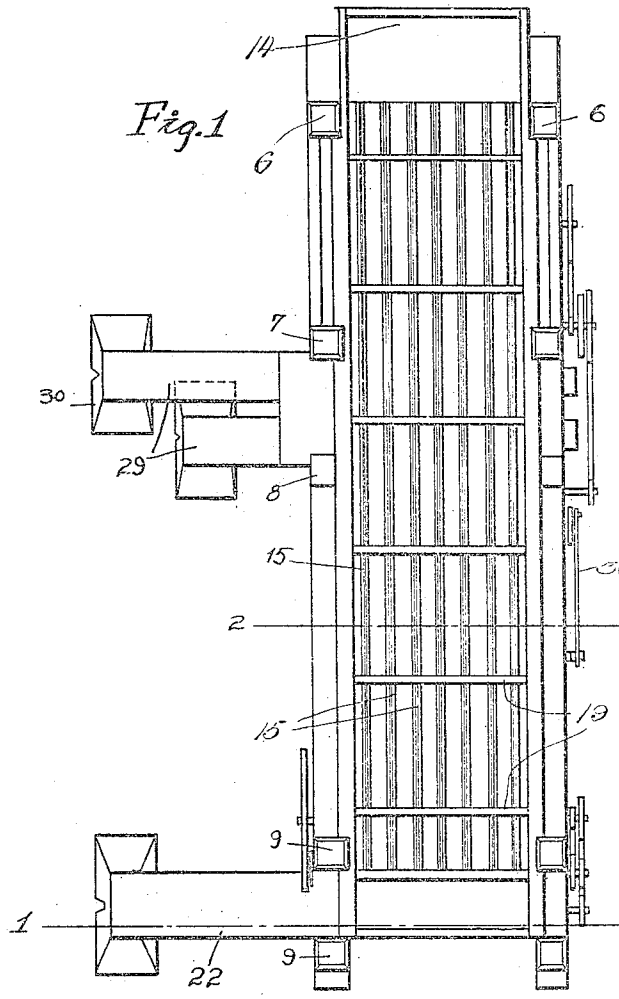
VEGETABLE GRADER.

APPLICATION FILED JULY 7, 1919.

1,379,715. Patented May 31, 1921.

4 SHEETS—SHEET 1.

Fig. 1



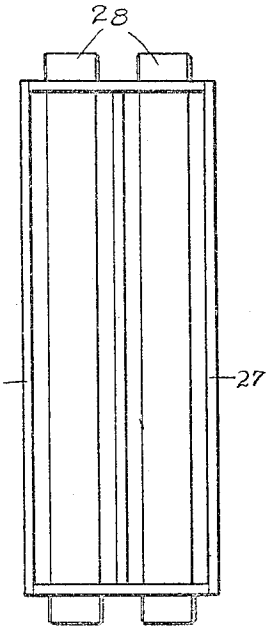


Fig. 2.

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4 SHEETS—SHEET 2.

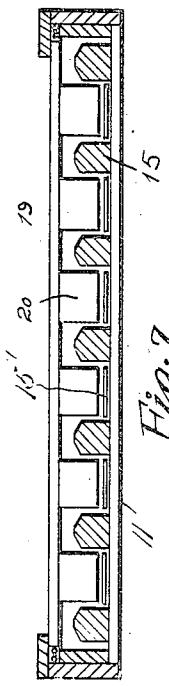


Fig. 2.

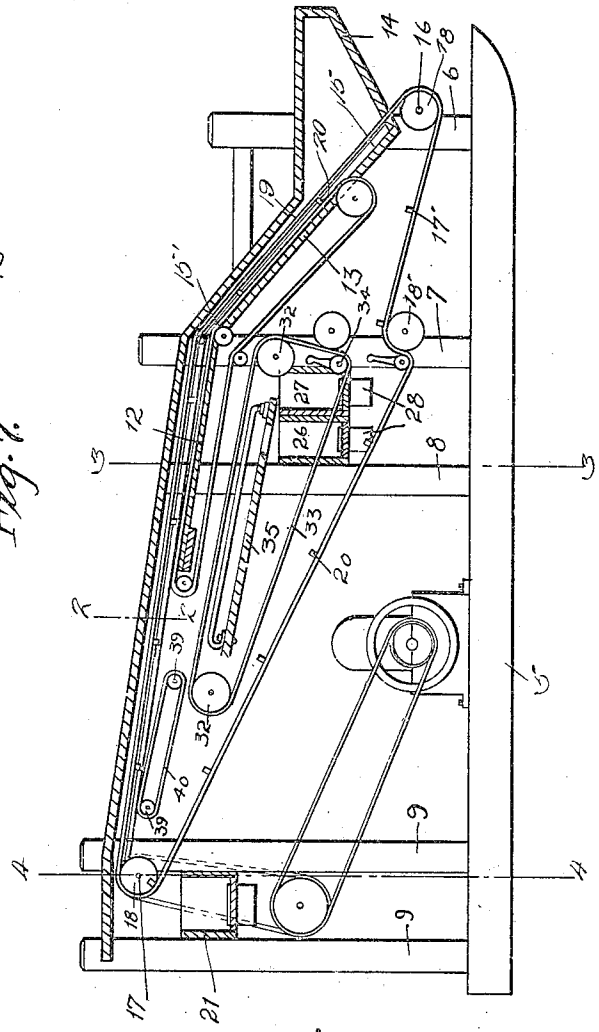


Fig. 3.

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4 SHEETS—SHEET 3.

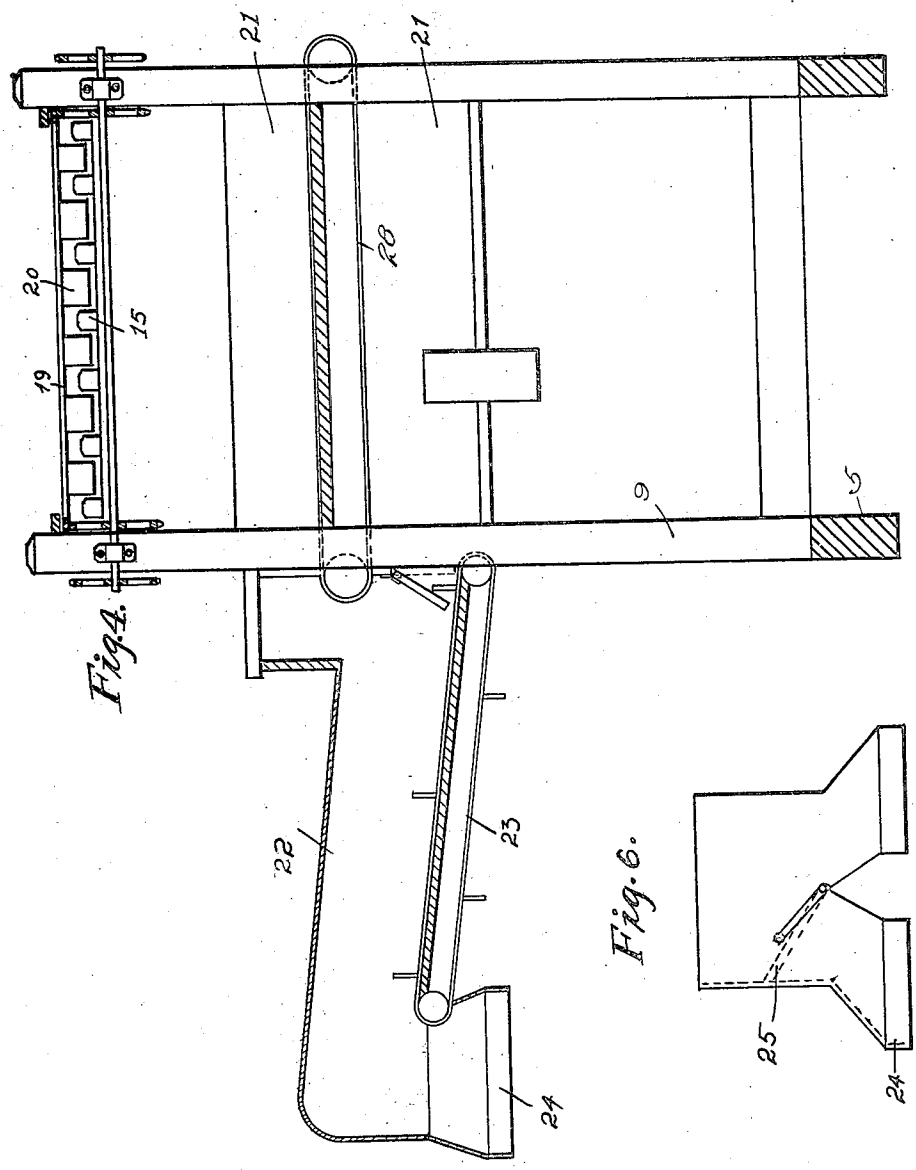


Fig. 4.

Fig. 6.

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VEGETABLE GRADER.

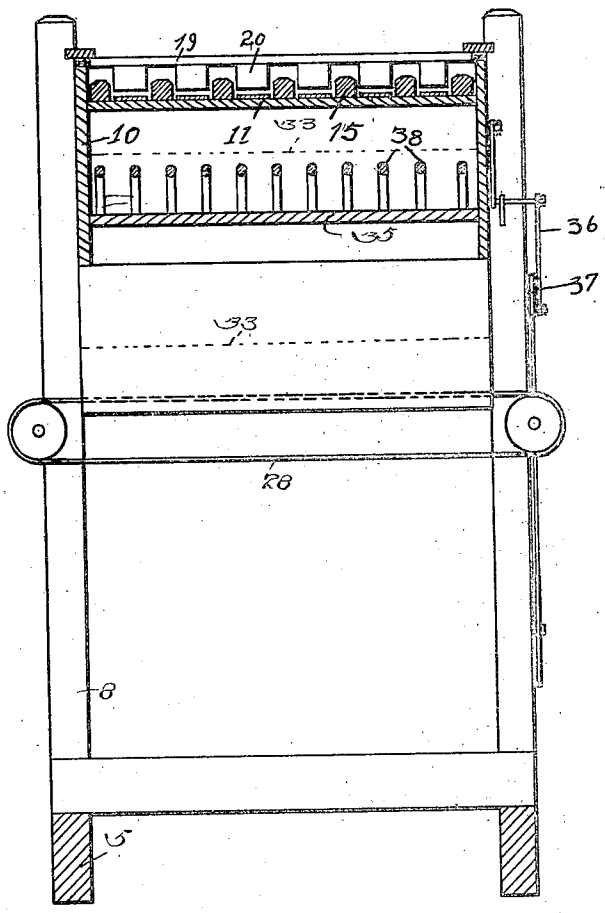
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4 SHEETS—SHEET 4.

Fig. 5.



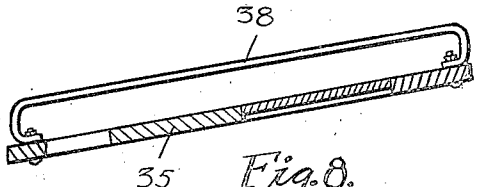


Fig. 8.

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UNITED STATES PATENT OFFICE.

ALLISON H. PARKS, OF YAKIMA, WASHINGTON.

VEGETABLE-GRADER.

1,379,715. Specification of Letters Patent. Patented May 31, 1921.

Application filed July 7, 1919. Serial No. 309,069.

To all whom it may concern:

Be it known that I, ALLISON H. PARKS, a citizen of the United States, residing at Yakima, in the county of Yakima and State of Washington, have invented a new and useful Vegetable-Grader, of which the following is a specification.

This invention relates to vegetable graders or sizers, the principal object being to provide a machine for grading or sorting vegetables into various sizes.

A second object of the invention is to provide a machine for sizing vegetables wherein the vegetables are placed in a hopper and thence conveyed through the machine, the different sizes passing into the chambers provided therefor and collected in bags or other receptacles.

A further object of this invention resides in the provision of a potato and other vegetable sizing machine which is equipped with a novel shaker table that classes certain sizes of the vegetables.

Still another object resides in the provision of a mechanism of this character having discharge spouts at the ends of the vegetable receiving compartments which will permit receptacles or bags being always in a position to be filled after one or more have been filled and removed.

Still another object of this invention resides in the provision of a simple grading machine having the above characteristics which is simple in construction, which consists of few parts that may be readily assembled and disassembled, and which can be manufactured and placed on the market at a small cost.

With the above and other objects and advantages in mind, the invention consists of combinations of elements constructions and arrangements, operations and general assemblage which will be hereinafter enlarged upon and recited in the appended claims and illustrated in the accompanying drawings, wherein:—

Figure 1 is a plan view of the grader;

Fig. 2 is a top plan of a pair of compartments and the conveyers associated therewith;

Fig. 3 is a vertical longitudial sectional view of the same; Fig. 4 is a vertical transverse sectional view taken on line 2—2 of Fig. 1; Fig. 5 is a vertical transverse sectional view taken on line 3—3 of Fig. 3; Fig. 6 is a detailed view of one of the discharge spouts; Fig. 7 is a transverse vertical sectional view taken on line 4—4 of Fig. 3 and Fig. 8 is a detailed longitudinal view of the shaker used in conjunction with the machine.

Referring to the drawings, there is provided a base indicated at 5 upon which is mounted pairs of supporting legs 6 and 7 and 8 and 9.

Mounted between and supported on the legs 7, 8 and 9 is an inclined conveyer table 10 which is provided with a floor 11 that extends only for a relatively short distance from its lower end. An inclined trackway 12 depends from the forward or lower end of the table 10 and is supported between the legs 6 and 7 and is provided with a bottom wall 13 which extends to the bottom transverse edge of the bottom 11.

A hopper 14 is supported between the legs 6 and 7 and is connected with the sides of the trackway 12, this hopper being adapted to receive the potatoes or other vegetables to be classed or sorted. Extending longitudinally of the bottom wall 13 of the trackway 12 and the bottom 11 is a plurality of spaced parallel guide rails 15, between which conveyer belts 15′ move to carry the vegetables or fruits to a point substantially intermediate the ends of the rails 15.

Extending transversely of the table and journaled in a pair of the supporting legs 6 is a shaft 16, a like shaft 17 being mounted in the upper ends of the pair of standards or legs 9. Sprocket wheels 18 are keyed to each end of each of these shafts over which endless belts 17′ or chains pass, the belts passing over a pulley 18′ having a slack take up mechanism connected therewith. Connected to these endless belts at intervals are cross bars 19 which extend transversely of the rails 15. Fingers 20 are carried by these bars and extend at right-angles thereto, the fingers passing between the rails and adapted to engage the fruit or vegetables and convey the same over the bottom wall of the table 10.

Supported by the legs 9 at one end thereof and extending transversely across the rear table at the bottom of the same is a compartment 21 into which the largest size vegetables or fruits are discharged from the conveyers 17′. A spout 22 is provided for this compartment 21 through which moves an endless belt or conveyer 23. This discharge spout 22 is provided with lateral

branches 24 at its end which are disposed downwardly and are adapted to have bags secured thereto. A valve 25 is pivoted in this discharge spout and disposed between the two branches so that either one may be closed while the vegetables or fruit are being discharged through the other branch and into the receptacle attached thereto.

Supported between the upper ends of the forward legs 7 and the adjacent legs 6 is a pair of compartments 26 and 27, the compartment 26 being adapted to receive the smallest size of vegetables or fruits while the compartment 27 receives the next larger size. A conveyer 28 is mounted in each of these compartments 26 and 27 and a discharge spout 29 is provided for each of these compartments which is arranged at one side of the machine and extends at an angle with respect to the base. Each of these discharge spouts is provided with lateral branches 30 and a control valve identical to the valve described above.

Passing over pulleys 32 journaled beneath the table 10 is a plurality of spaced endless belts 33, which carry the smaller grades of articles over the shaker table, the smallest grade falling through between the belts where the same pass onto the shaker table 35. A slack take up mechanism 34 is provided for these belts. Mounted below the table 10 and extending parallel therewith is an inclined shaker table 35 which is operatively connected with a rod 36 having an operative connection with an eccentric 37 rotated in any desirable manner. Secured to this shaker table is a plurality of spaced parallel bars 38 upon which the vegetables or fruit is dropped from an endless belt, the smaller vegetables or fruit passing between the bars and falling on the table and into the compartment 26, the larger sized vegetables passing into the receptacle 27. The fruits or vegetables conveyed to the receptacles 26 and 27 are discharged through the spouts as before described.

Movable about pulleys 39 journaled beneath the upper ends of the rails is an endless belt 40 the purpose of which is to convey fruits or vegetables to the belt should they fall through at this point. This belt is driven to move toward the shaker table.

The construction herein illustrated and described is considered the preferred embodiment of the invention and it is to be understood that changes and alterations may be made therein without departing from the spirit of the invention or sacrificing any of the advantages thereof.

What is claimed is:—

1. In a grader, an inclined table, a plurality of spaced parallel guide rails mounted thereon, a receptacle mounted below the upper end of the guide rails, a conveyer belt movable above the rails, depending fingers carried by the belt and projecting between the rails to engage the objects to be graded to move the same between the rails, a plurality of belts movable along the table between the guide rails, the latter belts extending toward the upper ends of the guide rails, a shaker table disposed below such belts adapted to receive the objects as the same are moved toward the end of the belts, receptacles disposed below the end of the shaker table adapted to receive the objects, and means for driving the belts and shaker table.

2. In a vegetable grader, a supported table, a hopper at one end of the table for receiving vegetables to be graded, a plurality of longitudinally disposed guide rails extending the length of the table between which the vegetables are adapted to pass, an endless belt movable over the table, fingers projecting therefrom and movable between the guides and adapted to carry the vegetables therebetween, a receptacle at the outer ends of the guide rails for receiving the larger sized vegetables, a shaker table disposed below the bars and adapted to receive the vegetables that fall between the guide rails, the shaker table including a plurality of longitudinally extended parallel bars, a receptacle disposed at one end of the shaker table and between the bars for receiving the smallest sized vegetables, and a receptacle disposed at the end of the bars for receiving the vegetables that pass over the ends thereof, and means for driving the belt and reciprocating the shaker table.

3. In a vegetable grader, a base, supporting legs mounted at the ends thereof, an inclined table mounted on the legs, a hopper at the lower end thereof, a plurality of parallel guide rails mounted on the table, a pair of endless belts mounted at opposite sides of the table, cross bars connecting the belts, fingers projecting therefrom and movable between the guide rails and adapted to move the vegetables therebetween, the guide rails projecting beyond the table, the smaller size vegetables being adapted to fall therethrough, a receptacle for catching the latter, and means for driving the endless belts.

4. In a vegetable grader, an inclined table, a hopper at one end thereof, a plurality of endless belts movable over the table, a plurality of guide rails extending longitudinally above the table and projecting beyond the same, means for moving vegetables between the rails, the smaller sized vegetables falling therethrough after passing beyond the endless belts, a receptacle below the rails for catching the vegetables that fall, and means for driving the endless belts.

5. In a vegetable grader, a supported table, a plurality of guide rails extending

longitudinally above the table and projecting beyond the same, an endless belt movable over the table, fingers carried by the belt and movable between the guide rails for moving the vegetables therebetween, a plurality of endless belts disposed below the rails beyond the table onto which the vegetables falling between the rails drop, a shaker table disposed below the latter belts, and receptacles one of which being disposed below the shaker table and the other at the end thereof, a second endless belt mounted below the guide rails at the outer end thereof and adapted to convey the vegetables that pass through the guide rails at the upper end of the same onto the endless belt above the shaker table.

6. In a vegetable grader, a supported table, endless belts movable thereover, a plurality of parallel guide rails extending longitudinally of the table, a second endless belt passing above the rails, vegetable engaging fingers projecting from the latter belt between the guide rails, a receptacle mounted below the lower ends of the guide rails, receptacles disposed below the table, a plurality of endless belts mounted below the table and projecting slightly beyond the same and adapted to convey vegetables that pass through the rails to the latter receptacle, an endless belt mounted in each of the receptacles, a discharge spout at the end of each of the endless belts, and means for driving the endless belts.

7. In a grader an inclined table, a plurality of spaced parallel guide rails mounted thereon and extended beyond the upper end thereof, a conveyer belt movable above the rails, depending fingers carried thereby and movable between the rails, a plurality of endless belts movable along the tables between the guide rails for conveying articles to be graded toward the upper end of the table, said plurality of belts returning below the table at the upper end thereof, and means arranged below the upper ends of the table and below the plurality of belts for further grading articles.

8. In a grader, an inclined endless belt for conveying articles upwardly, said belt coöperating with means whereby small articles are permitted to drop downwardly of the conveyer, a plurality of downwardly inclined endless belts arranged below the first named belt and coöperating means, an inclined shaker table arranged below the plurality of belts, said shaker including a table having an opening therein adjacent its lower end, and a plurality of spaced parallel bars disposed in spaced parallel relation to the table, and means for conveying articles from said grader after they are discharged from the table.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

ALLISON H. PARKS.

Witnesses:
JOHN B. CAREY,
ELLSWORTH O'BLENESS.