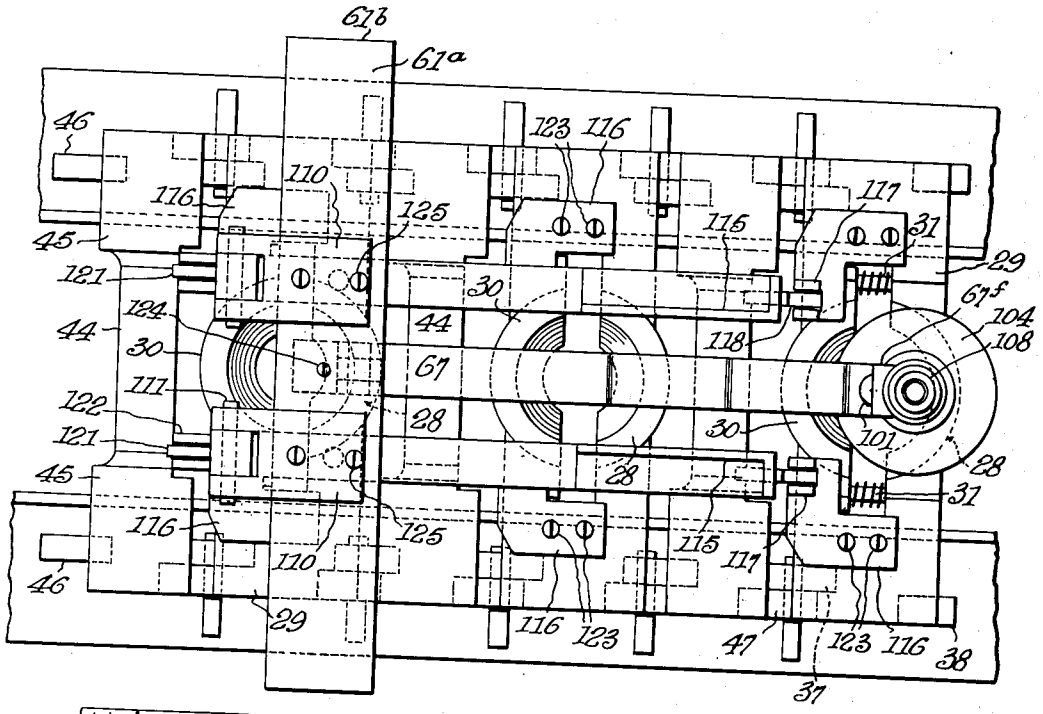
July 5, 1955 E. W. BRIDGE 2,712,334

VEGETABLE ORIENTING AND TRIMMING MACHINE

Filed Jan. 11, 1950

2 Sheets-Sheet 1

Fig. 1.



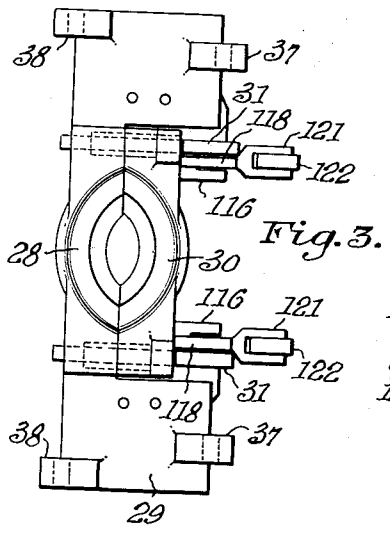


Fig. 3.

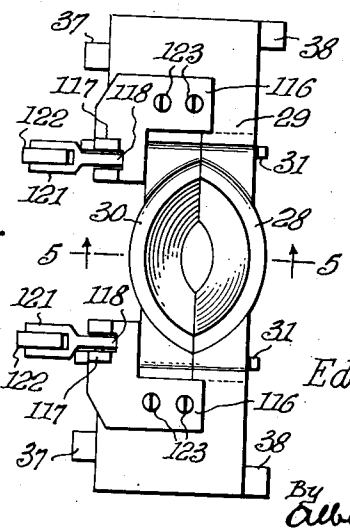


Fig. 4.

Inventor
Edward W. Bridge

By Albert E. Dieterich

ATTORNEY

July 5, 1955

E. W. BRIDGE

2,712,334

VEGETABLE ORIENTING AND TRIMMING MACHINE

Filed Jan. 11, 1950

2 Sheets-Sheet 2

Fig. 2.

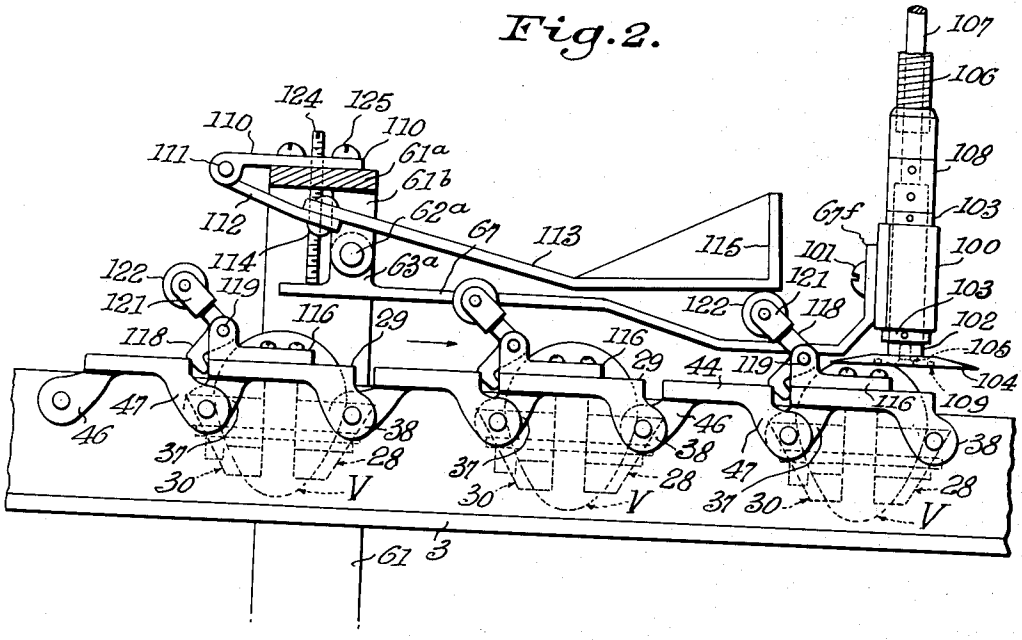
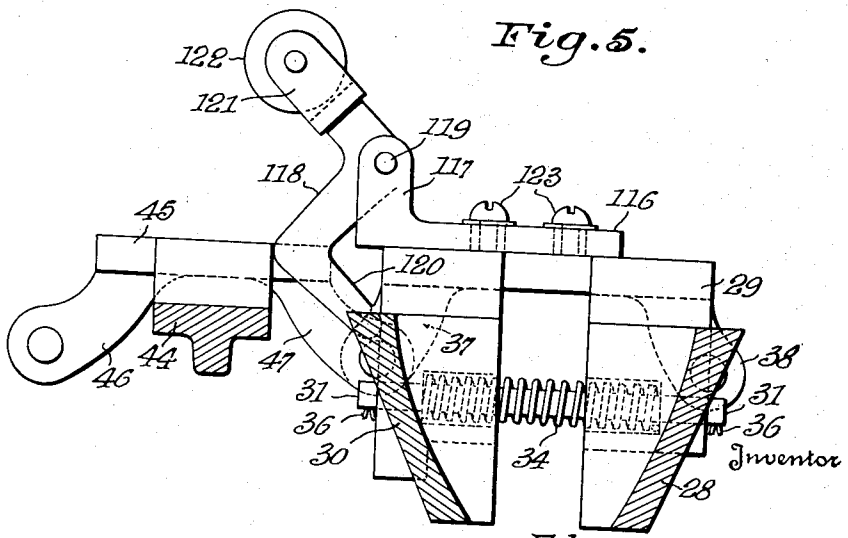


Fig. 5.



Inventor

Edward W. Bridge

By

Albert R. Dieterich

ATTORNEY

United States Patent Office

2,712,334

Patented July 5, 1955

2,712,334

VEGETABLE ORIENTING AND TRIMMING MACHINE

Edward W. Bridge, Philadelphia, Pa.

Application January 11, 1950, Serial No. 138,048

3 Claims. (Cl. 146—81)

The present invention relates to a machine for trimming vegetables.

The present invention constitutes an improvement as regards certain parts of the vegetable trimming machine disclosed in prior Patent 2,491,950, of December 20, 1949.

One of the objects of the present invention is to provide a vegetable trimming machine having vegetable receiving pockets so arranged as to materially increase the rapidity and ease with which said pockets may be loaded with vegetables.

Another object is to provide a vegetable trimming machine having vegetable receiving pockets formed of a pair of coacting members so arranged that the pockets are continuously held in open position for receiving the vegetables.

Another object is to provide a vegetable trimming machine having vegetable receiving pockets with means associated therewith for firmly clamping the vegetables in the pockets prior to engagement of the vegetables with a trimming knife.

Fig. 1 is a detail top plan view of so much of the machine of my patent aforesaid as is necessary to illustrate the present invention.

Fig. 2 is a side elevation of the same.

Fig. 3 is a detail inverted plan view of one of the pocket links with some of my improvements included, the link parts being closed.

Fig. 4 is a top plan view of the same.

Fig. 5 is an enlarged cross section on the line 5—5 of Fig. 4.

In the drawings, in which like parts bear the same reference character in all the figures, those parts in the present drawings which correspond to like parts in the patent aforesaid bear the same reference character as in that patent.

The endless chain is composed of pocket links and connecting or intermediate links. Each of the pocket links includes a relatively fixed section **28** and a slidable section **30**, the section **30** sliding on guide pins or rods **31** held in the section by cotter pins **36**. Springs **34** on the pins **31** serve continuously to tend to separate the sections **28**, **30** to their open position.

The pocket links have raised ends **29** which ride tracks **3**. The connecting links **44** also have raised ends **45**. The raised ends **29** have lugs **37**, **38**, while the raised ends **45** have lugs **46**, **47**.

61 are posts which carry a bridge **61a** having lugs **61b** in which is a pivot pin **62a** that also passes through a lug **63a** on a cutter-carrying bar **67**. The bar **67** has an upturned end **67f** that is secured at **101** to a bearing **100** for a cutter-carrying shaft **102**. Collars **103** hold the shaft **102** in place. A bevel-edge cutter disc **104** has a screw **105** tapped into the lower end of the shaft **102**.

A flexible drive shaft **107** in a flexible casing **106** is coupled as at **108** to shaft **102**. The disc **104** has spanner-wrench holes **109** for the usual purpose.

Leaves or plates **110** of a pair of hinges are secured,

at **125**, to the bridge **61a**, the other leaves **112** being hinged at **111** to the plates **110** and lying below the bridge **61a**. Cam shoes **113** are riveted at **114** to the leaves **112** and have weighted ends **115** for a purpose presently to appear.

Adjustably secured to each pocket link **28** by screws **123** are plates **116** having hinge lugs **117** carrying pivot pins **119** on which pin levers **118** are pivoted. The levers have fingers **120** which engage the sides of the slidable sections **30**. The levers also have arms **121** which carry rollers **122** which ride under the cam shoes **113**, the weight of which arms tends to depress the rollers **122** and cause the fingers **120** to push the sections **30** toward the sections **28** of the pocket links to grip the vegetable V and hold it until it shall have been trimmed by the rotating knife or cutter-disc **104**.

In order to position the knife **104** at the required heights for trimming, I provide an adjustable stop screw **124** in the bridge **61a** to engage the arm **67** as best shown in Fig. 2.

The machine of my patent above mentioned performs accurately, but in the production over and above hand operation it does not warrant the food packer to pay the purchase price of the machine. Fifty pockets per minute as the machine runs is sufficient production, provided the operator could fill the pockets with vegetables.

After making exhaustive tests, both in the plant and out in the field, applicant finds that the difficulty lies in the operator's trying to force the pocket open while he is trying to push the vegetable to the bottom of the pocket. This gives the operator a false movement and reduces his speed to the point where a hand operator could complete as many vegetables per hour as the operator on the machine.

Applicant found that if the pockets were open, the operator could feed the machine and keep all the pockets filled without too much effort in doing so. Applicant has therefore made the necessary changes, placing springs in between the two parts of the pocket. This holds the pocket open to its full diameter at all times. The vegetable is placed in the open pocket, the same as originally, with the stem end through the hole in the bottom and the pocket closed against the sides of the vegetable to hold it while trimming, without the aid of springs on the outside, as in the original patent. The clamping action takes place by having the small clamping levers, with the small cam rollers attached to one end, mounted one on each side of the pocket on the stationary half of the pocket. As the pocket travels forward to meet the cutting knife or disc, the small cam rollers come in contact with the two weighted hinged cam shoes. As the pockets travel under the weighted cam shoes the small cam rollers push the levers down, forcing the ends of the levers against the adjustable half of the pocket and forcing this half of the pocket tight against the vegetable. The pocket continues to travel under the cam shoe holding the pocket closed until the vegetable has travelled far enough forward to be cut, making sure the pocket following does not form contact with the weighted cam shoes. This permits the vegetable to be trimmed before the two weighted cam shoes have been disturbed.

Applicant's reason for having two independent hinged cam shoes with weights made of heavy material such as lead, iron, etc., is to apply the same number of pounds pressure against the adjusting sides of the pockets at all times, regardless of whether the operator is trimming the minimum size of one inch or the maximum size of two inches. The weighted cam shoes apply weight on the small cam levers pushing against the vegetable and holds it clamped with the same pounds' pressure. This takes care of any fractional dimension of the diameter of the vegetable, according to the size of the vegetable being

trimmed. Another reason for using the two cam shoes in place of one large weighted cam shoe is that the two individual cam shoes will permit either side the freedom of use in the event that one side of the pocket might close a little late (which would not allow the small lever on the opposite side to close the same distance) and still act independently to raise the weighted cam shoe on that side to allow freedom on the forward motion of the pocket while it is travelling forward.

From the foregoing description, taken in connection with the accompanying drawings, it is thought that the construction, operation and advantages of the present invention will be clear to those skilled in the art to which it relates.

What I claim is:

1. In a vegetable trimming machine embodying a conveyor chain composed of pocket and connecting links and a cutting mechanism, each of said pocket links consisting of a fixed part and a movable part slidably carried by the fixed part, the improvement which includes springs positioned between and engaging said fixed and movable parts and continuously tending to separate said parts to receive a vegetable to be trimmed, plates secured to said fixed part, levers pivotally mounted on said plates and arranged to engage the movable part for compressing said spring and urging said movable part towards said fixed part, rollers mounted on said levers, a support positioned above said conveyor chain, a pair of hinges having an end secured to said support in spaced relation, a pair of cam shoes secured to the free ends of said hinges, said cam shoes having weighted ends engageable with said rollers as the pocket links approach the cutting mechanism for applying pressure to the movable part of each pocket link during the period that said rollers are in engagement with said weighted ends.

2. In a vegetable trimming machine, a conveyor composed of pocket and connecting links, each of said pocket links consisting of a fixed part and a movable part with the movable part having spaced apertures formed therein, guide pins carried by said fixed part and projecting through said spaced apertures for slidably mounting the movable part on said fixed part, springs mounted on said pins and engaging said fixed and movable parts and continuously tending to separate said parts to receive a vegetable to be trimmed, means carried by said fixed part and engageable with said movable part for compressing said springs and urging said movable part toward said fixed part to clamp a vegetable therebetween, cam shoes pivotally mounted on said machine for engaging said means to apply pressure to said movable part.

3. In a vegetable trimming machine, a conveyor composed of pocket and connecting links, each of said pocket links consisting of a fixed part and a movable part with the movable part having spaced apertures formed therein, guide pins carried by said fixed part and projecting through said spaced apertures for slidably mounting the movable part on said fixed part, springs mounted on said pins and engaging said fixed and movable parts and continuously tending to separate said parts to receive a vegetable to be trimmed, levers pivotally mounted on said first part and arranged to engage said movable part for compressing said springs and urging said movable part toward said fixed part, and cam shoes pivotally mounted on said machine engageable with said levers for applying pressure to said movable part.

References Cited in the file of this patent

UNITED STATES PATENTS

822,218	Mueller	May 29, 1906
835,055	Brooks	Nov. 6, 1906
1,102,011	Cunha	June 30, 1914
1,645,600	Kohler	Oct. 18, 1927
1,901,042	Robbins	Mar. 14, 1933
1,906,438	Vetch	May 2, 1933
2,158,977	Douthitt	May 16, 1939
2,491,950	Bridge	Dec. 20, 1949
2,494,914	Urschel et al.	Jan. 17, 1950