Nov. 3, 1959 R. T. KENNEDY 2,911,023

PUSHER MEMBER ASSEMBLY FOR STRIP TYPE VEGETABLE CUTTERS

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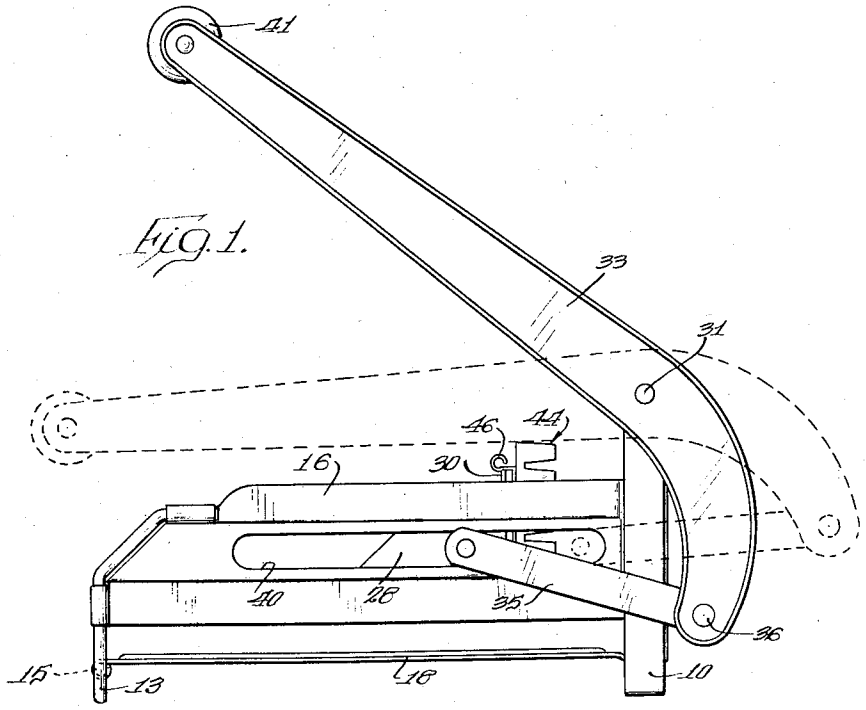


Fig. 1.

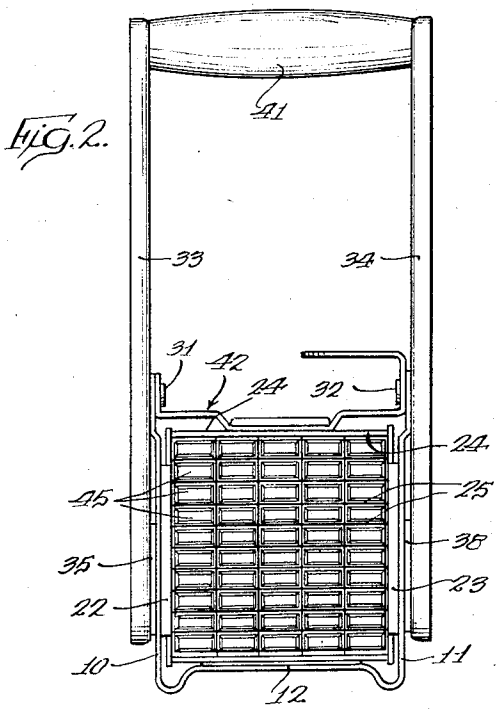


Fig. 2.

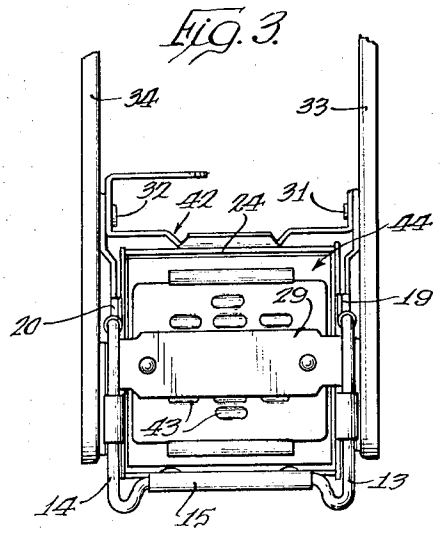


Fig. 3.

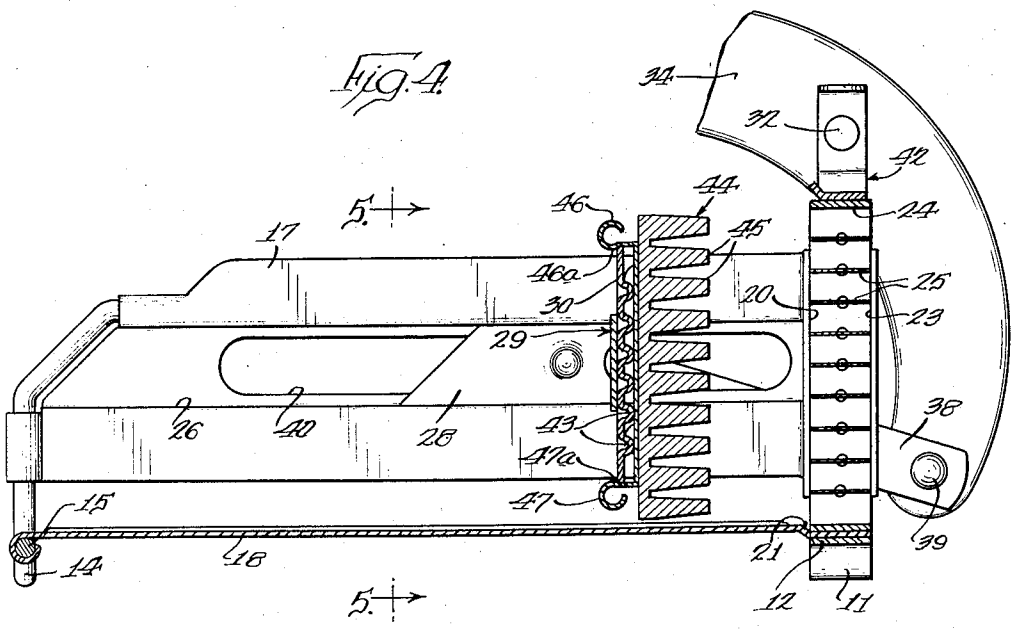
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Fig. 4.



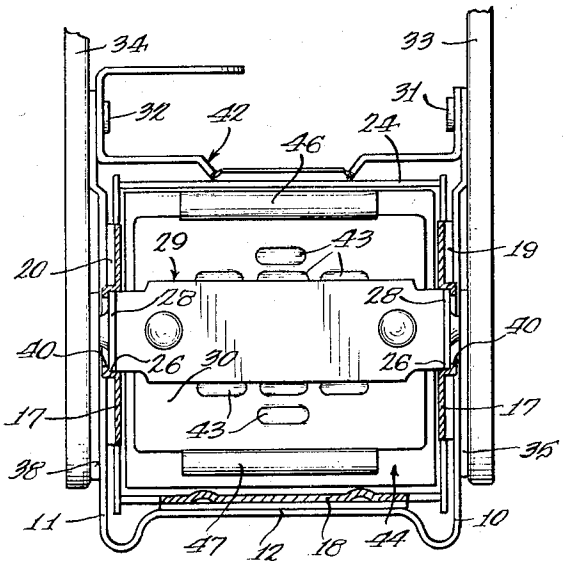


Fig. 5.

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PUSHER MEMBER ASSEMBLY FOR STRIP TYPE VEGETABLE CUTTERS

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1 Claim. (Cl. 146—169)

The present invention relates to a pusher member assembly for use in combination with a cutting device having a multiple set of regularly spaced parallel cutting blades operative to slice an article such as a potato into strips when the article is forced against such blades and through the spaces between such blades under pressure applied by a pusher plate movable toward and away from said blades. The pusher member is effective to move the strips substantially clear through the spaces between the blades with the aid of extensions or projections on the pusher member arranged in a pattern conforming to the spaces defined by the blades of the cutting unit so as to permit ready entry of such extensions into said spaces between the blades.

In certain types of cutting devices of the character indicated, provision is made for interchangeable cutting blade units wherein the blades of one unit are spaced apart a distance less or greater than the spacing of the blades in the other units so as to accommodate production of various sizes of strips from the article to be cut. Unless the spacing of the blades of the various cutting units is such that the extensions or projections on the cooperating pusher member have entry to the spaces between the blades of each of such units it is necessary to provide corresponding interchangeable pusher plates.

With the foregoing in mind, the principal object of the present invention is to provide a pusher member assembly wherein the projections are provided on a unit adapted for removable attachment to the pusher member to permit the convenient interchange of such units in conjunction with the use of selected cutting blade assemblies having different blade spacing arrangement and also to facilitate removal of the unit for cleaning purposes.

Another object is to provide a removable attachment for a pusher member having projections on its working face matching the spacing of blades of one or more different cutting blade assemblies, wherein the attachment unit is provided with projections matching the spacing of blades of additional cutting blade assemblies not matched by the projections on the working face of the pusher member.

Other and further objects of the present invention will be apparent from the following description and claims, and are illustrated in the accompanying drawings, which, by way of illustration, show an exemplary embodiment and the principles thereof.

In the drawings:

Fig. 1 is a side elevational view of a cutting device embodying the features of the present invention.

Fig. 2 is a front view thereof.

Fig. 3 is a fragmentary rear view of the device shown in Fig. 1.

Fig. 4 is a fragmentary enlarged side elevational view thereof with parts shown in section to illustrate details of construction.

Fig. 5 is a fragmentary enlarged front view with parts in section.

Referring to the accompanying drawings, a cutting device of the type on which an attachment according to the present invention is advantageously applicable, includes a U-shaped front frame member having a pair of arms 10 and 11 extending in upwardly spaced parallel relation substantially perpendicular to an integral bridge portion 12 and a rear frame member having a pair of arms 13 and 14 extending in upwardly spaced parallel relation substantially perpendicular to an integral bridge portion 15, with the upright arms of the frame members at substantially an equal distance apart. The front and back frames are secured in rigid fore and aft relationship by means of a side wall member 16 joining the upright arms 10 and 13, a second sidewall member 17 joining the upright arms 11 and 14, and a bottom wall member 18 joining the bridge portions 12 and 15, whereby the members 16, 17 and 18, in conjunction with the front and back frame members define an elongated open topped and open ended trough-like structure. The portion of each side wall member 16 and 17 within the confines of the upright arms 10 and 11 of the front frame and the portion of the bottom member 18 overlying the bridge portion 12 of the front frame, is offset outwardly with respect to portions of the members 16, 17 and 18 extending rearwardly therefrom to define forwardly facing shoulders 19, 20 and 21 in a plane perpendicular to the bottom member 18. These shoulders in combination with upright flanges 22 and 23 bent inwardly from the forward ends of the portions of the side wall members 16 and 17 in forwardly spaced parallel relation to the shoulders 19 and 20 respectively, define an upwardly open socket or channel into which the rectangular frame 24 of a cutting blade assembly may have vertical sliding fit and be releasably locked in fixed perpendicular relation to the bottom and side wall members 16, 17 and 18 respectively. It will be noted that the cutting blades 25 are secured together in a grid-like pattern within the frame 24 with the edges of the blades facing rearwardly into the area between the side wall members 16 and 17.

Transversely aligned channels 26 formed in the side wall members 16 and 17 provide guideways in which the arms 28 extending in spaced parallel relation to a bracket 29 have sliding movement fore and aft of the side wall members 16 and 17. A pusher member 30 secured to the bracket 29 with its forward face in a plane substantially parallel to the cutting blade assembly is accordingly actuated toward and away from the cutting blade assembly in response to fore and aft movement of the arms 28 in the guideways 26. Upward extensions of the arms 10 and 11 of the front frame are provided with transversely aligned stub shafts or pivots 31 and 32 respectively, and a pair of levers 33 and 34 are supported on said shafts 31 and 32 respectively for swinging movement in spaced parallel vertical planes. A link 35 joining the free swinging end of lever 33 as at 36 and joining one of the arms 28 of bracket 29 via a slot 40 in the channel 26 of the side wall 16 and a similar link 38 joining the lever 34 as at 39 and joining the other arm 28 of bracket 29 via a similar slot 40 in the channel 26 of the side wall 17, provide interconnecting means between the levers 33 and 34 and the pusher member 30 to move the latter toward and away from the cutter blade assembly under control of swinging movement of the levers 33 and 34. The ends of the levers 33 and 34 remote from the ends joined to the links 35 and 38 are connected by a suitable handle 41.

The shafts or pivots 31 and 32 have inwardly extending ends which provide horizontally aligned bearings for a swinging bar 42. The upper edge of the cutter blade assembly frame 24 has upward engagement with the bar 42 to lock the frame 24 against upward dis-

placement when the bar **42** is in downwardly swung position. The frame **24** is accordingly releasable for removal upon moving the bar **42** into upwardly swung position out of the path of the frame **24** as the latter is withdrawn from its seated position against the shoulders **19**, **20** and **21**.

As will be noted from the drawings, while the levers **33** and **34** are in forwardly and upwardly swung position, the bottom member **18** is cleared to provide an area for receiving an article to be cut by the blades **25**, such as a potato, in the space between the blades **25** and the pusher member **30**, and upon downward and rearward swinging movement of the levers **33** and **34**, the potato will be forced against the blades **25** to sever the potato into strips. In order that the pusher member **30** may effectively push the severed strips forwardly through the spaces defined by the blades **25**, the plate **30** is provided with forwardly extending projections **43** arranged in a pattern matching the spacing of the blades **25**.

In order that the pusher member **30** may also effectively operate to push the severed strips through the blades of a substituted cutting blade assembly having blades spaced in non-matching relation to the projections **43** on the member **30**, the present invention contemplates an attachment unit **44** as shown in Fig. 3. This unit, having a pattern of projections **45** differing from those on the member **30**, is provided along one edge with a resilient clip **46** projecting rearwardly from the unit **44** and a similar clip **47** at the opposite edge and projecting rearwardly from the unit **44**. As so arranged the clips **46** and **47** are at such distance apart as to have yielding engagement with the opposed top and bottom edges of the pusher member **30** for demountably fastening the unit **44** on the member **30**. As a result the unit **44** may be conveniently applied to and removed from the member **30** and thereby conveniently interchangeable with other similar units **44** having predetermined but different spacing of its projections **45** to match a selected cutting blade assembly having a corresponding space pattern between the blades thereof.

The attachment unit **44**, in the embodiment shown in the drawings, consists of a structure having projections **45** integral therewith, preferably a die casting and the clips **46** and **47** form extensions of opposite edge portions of a rectangular plate riveted to the back surface of the unit **44**. Each extension is curled in a direction away from the plate to present a smooth surface toward the edge of the pusher member **30** to be engaged thereby. The clips are offset as at **46***a* and **47***a* respectively to provide a detent in which the edge portions of the pusher member **30** are trapped against unintentional withdrawal.

Thus the unit **44** provides a most convenient "snap-on" or "snap-off" attachment so as to make the presser plate change over with minimum time and effort as needed to accommodate interchanging of cutter blade assemblies in cutting devices of the character indicated.

What is claimed is:

A cutting device for vegetables and the like comprising an elongated support member, a grid-like cutter adjacent one end of said support arranged substantially normally thereto, a pusher member of substantially the same size as said cutter, parallel thereto, and movable along said support member, said pusher member having a face portion, a cutter clearer unit having a plurality of projections thereon corresponding in number and size to the openings in the cutter, said cutter clearer unit contacting said pusher face portion and having spring clip elements on opposite marginal edge portions thereof in engagement with adjacent edge portions of said pusher, whereby when a vegetable is pushed along said support member by said pusher toward said cutter, said projections on said pusher will push the said vegetable entirely through said cutter.

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