July 6, 1943. W. R. FEEMSTER 2,323,863

BEAN SLICER

Filed March 7, 1941

Fig. 1.

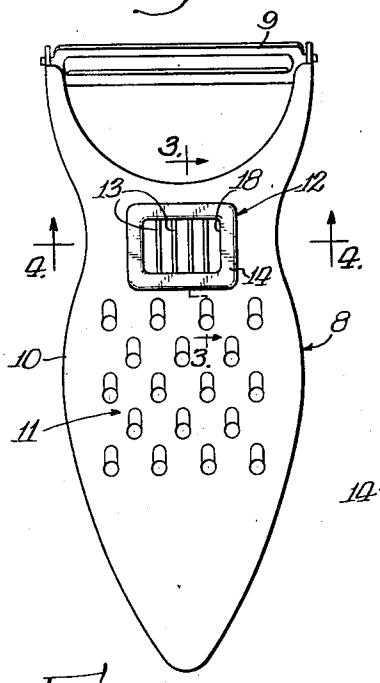


Fig. 4.

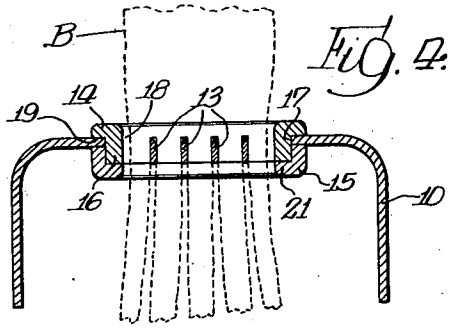


Fig. 2.

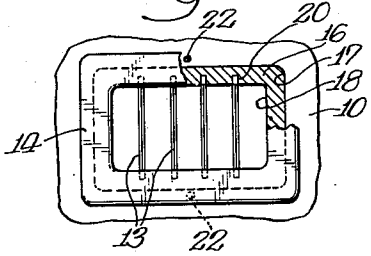


Fig. 3.

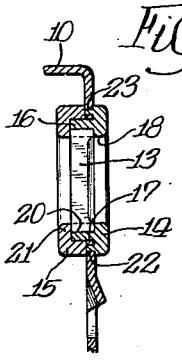


Fig. 6.

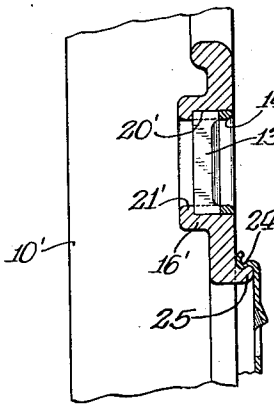


Fig. 7.

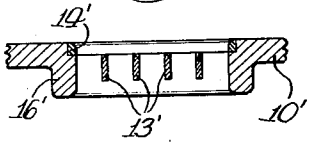
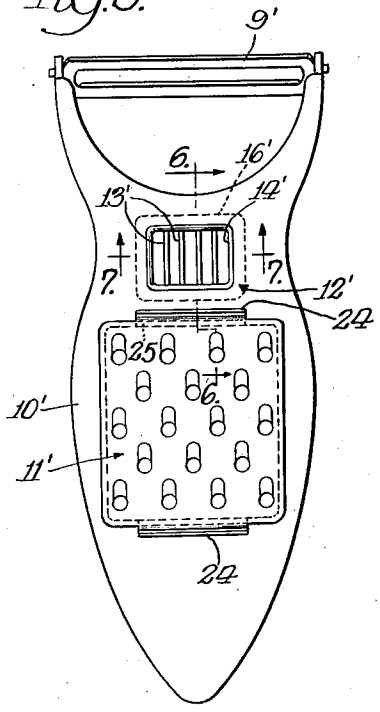


Fig. 5.



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BEAN SLICER

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Application March 7, 1941, Serial No. 382,243

10 Claims. (Cl. 146—170)

The invention relates generally to a device for slicing vegetables longitudinally and more particularly to a device for slicing string or green beans.

A general object of the invention is to provide a slicer of the character described having a new and improved manner of mounting the blades.

A more particular object is to provide a slicer in which the blades are mounted in moulded plastic.

Another object is to provide a moulded mounting for the blades so constructed that it may be formed as an integral part of a plastic material tool or as a unit that is readily applied to a tool formed of metal.

Still another object is to provide a moulded plastic mounting for the blades which is so constructed that the blades are after-inserted and need not be inserted during the moulding process.

Other objects and advantages will become apparent from the following detailed description taken in connection with the accompanying drawing, in which:

Fig. 1 is a plan view of a kitchen tool or utensil embodying the vegetable slicer device of this invention.

Fig. 2 is a fragmentary and enlarged plan view showing the slicer device only and having a portion broken away to reveal certain internal construction.

Fig. 3 is a sectional view taken approximately along the line 3—3 of Fig. 1.

Fig. 4 is a sectional view taken approximately along the line 4—4 of Fig. 1; Figs. 2, 3 and 4 being enlarged to approximately twice the showing in Fig. 1.

Fig. 5 is a fragmentary plan view showing the slicer device incorporated in a tool having a plastic handle.

Fig. 6 is a sectional view taken along the line 6—6 of Fig. 5.

Fig. 7 is a sectional view taken along the line 7—7 of Fig. 5; Figs. 6 and 7 also being enlarged to about twice the showing in Fig. 5.

While the invention is susceptible of various modifications and alternative constructions, it is here shown and will hereinafter be described in two embodiments. It is not intended, however, that the invention is to be limited to the specific constructions or embodiments disclosed, but on the contrary it is intended to cover all modifications and alternative constructions falling within the spirit and scope of the appended claims.

For purposes of disclosure, the invention is here shown as incorporated in a tool or utensil, generally designated 8, employed in the preparation of vegetables prior to cooking. Such a tool has as a part thereof one or more elements for peeling, cleaning, or otherwise treating a vegetable, the tool here shown having a blade element 9 for peeling, a handle 10 which is grasped in manipulating the tool, and grating means 11 in the handle. The slicer device 12 is here shown incorporated in the handle 10 and is intended primarily for use in slicing elongated vegetables longitudinally thereof. A most common use for a slicer of this character would be in the slicing longitudinally of green or string beans. In Fig. 4 there is illustrated a bean B which is being forced through the slicer in conventional manner.

Generally, the slicer device 12 comprises a plurality, herein shown as four, parallelly disposed and laterally spaced blades 13, and two interfitting members 14 and 15 constituting a mounting or carrier frame for the blades. The blades are mounted on edge and may have single or double cutting edges, a single cutting edge being here shown. The blades are thin and generally rectangular in shape and normally are made of metal, though it is conceivable that blades of other material might be employed.

It is a feature of this invention that the mounting means or blade carrying frame is made of moulded plastic material, so constructed that the blades 13 need not be inserted during the moulding process, but may be inserted subsequent to the moulding operation, and the mounting means then assembled to secure the blades rigidly and firmly therein. It is also a feature of this invention that the resulting slicer device is of such construction that it may form a partially integral part of a tool having a plastic handle, or may be applied as a unit to a tool having a handle of metal or other non-plastic material. The slicer device shown in Figs. 1 to 4, namely, as applied as a separate unit to a tool having, for example, a metal handle, will first be considered. In this form, the moulded plastic member 14 takes the form of an annular and, in this case, substantially rectangular frame or ring having an annular flange 16 projecting laterally of the plane of the member, in this instance, downwardly as viewed in Fig. 4. To accommodate the member 14, the handle 10 is formed with a rectangular aperture 17 through which the flange 16 projects. The member 14 and its flange 16 being annular, an aperture 18 is defined thereby with the inner walls of the member 14 continuous and uninterrupted. The flange 16, however, is made somewhat thinner

than the main portion of the member 14 so that there is formed in the outer wall an annular shoulder 19 which rests on the handle 10 and serves to limit insertion of the member into the aperture 17.

Formed in opposite side walls of the member 14 during the moulding thereof are a plurality of recesses 20, the number of such recesses in each side wall conforming to the number of blades 13 and being in alinement with corresponding recesses in the opposite wall. The recesses are slot-like and open through the inner wall of the flange 16, as well as through the end wall of the flange 16, so as to permit the insertion of the blades 13 therein extending transversely across the opening 18. The recesses should be of such proportion that the ends of the blades are received snugly therein, and particularly they should be of such lateral dimension as to conform with the width of the blades 13. Under such circumstances, when the blades are properly inserted, the outer edge will be flush with the end wall of the flange 15.

The blades 13 are retained in the member 14 and the entire slicer device secured in the handle 10 by means of the member 15. This member, as herein disclosed, also takes the form of an annular ring or frame having a main portion encircling the portion of the flange 16 which projects downwardly and beyond the aperture in the handle 10. Extending radially inwardly is a flange 21 which overlies the end of the flange 16 and thus closes the openings of the recesses through the end of the flange, and retains the blades in the member 14. The end of the member 15 opposite the flange 21 bears against the underneath side of the handle 10 and thus serves in conjunction with the shoulder 19 to clamp the device firmly in the handle. The members 14 and 15 may be secured simply by giving them a very tight fit or by contracting 15 onto the member 16, but preferably in the assembly process a drop of solvent is applied to the interfitting portions which, because the members are plastic, momentarily softens the same and then evaporates. During the time that the members are softened, they become bonded together, and after the solvent has evaporated form a substantially integral structure. To further secure the members 14 and 15 to one another and in the handle 10, the member 14 is formed with minute nubs 22 depending from the shoulder 19. These nubs 22 are just slightly longer than the thickness of the metal forming the handle 10 and project through holes 23 formed in the handle. A drop of solvent is also applied to each nub during the assembly operation.

In Figs. 5 to 7, the slicer device 12' is shown incorporated in a tool having a handle 10' formed of a plastic material. In such a tool the slicer may in part be formed as an integral part of the tool. While either the member 14 or the member 15 may be moulded integrally with the handle of the tool, the member 15 preferably is so moulded, and such a construction is disclosed in Figs. 5 to 7. There results a depending annular flange 16' which is integral with the handle 10' and which has in turn integral with it a radially inwardly projecting flange 21'. Formed internally of the annular flange 16' are slot-like recesses 20' for the reception of the ends of blades 13', which are mounted transversely of the opening defined by the annular flange 16'. The recesses 20', instead however of opening through the bottom end of the flange 16', herein open through the upper surface of the tool handle, permitting the blades 13' to be dropped in from the top. The tool handle, moreover, is cut back at the level of the top edge of the blades 13' to receive a small annular ring 14' corresponding generally to the member 14 of the construction disclosed in Figs. 1 to 4. It will be seen that when the member 14 is inserted, as shown in Fig. 6, it overlies and thus closes the recesses 20' to retain the blades 13' firmly in the handle. The ring 14' preferably has a tight fit and also during the assembling operation a small amount of solvent is applied to the ring so that, after it has been pressed in place and the solvent evaporated, it is not only firmly pressed into position but actually has an integral construction with the handle 10'.

Should it be desired to provide a grating means 11, such as disclosed in Fig. 1, in a tool having a plastic handle, the handle 10' may be given a mere outline form, as shown in Fig. 5, and a metal grating device 11' detachably secured over the opening formed by the handle. The grating device would be simply a flat piece of metal suitably apertured to form the grating elements with depending and springy elements 24 at each end. The handle 10' in turn would be formed with ribs or flanges 25 with which the elements 24 would engage, enabling the grating means 11' to be simply snapped on or off.

It is believed apparent from the foregoing that I have perfected a slicer device for slicing elongated vegetables longitudinally, having a greatly improved mounting for the blades of the slicer device. With this construction, mounting of the blades is greatly facilitated, reducing the cost of manufacture and at the same time providing an improved and enhanced product, since the blades are more tightly and rigidly held than heretofore. My slicer device further is advantageous in that it may be incorporated as a partially integral part when a tool is made of certain material, or is readily incorporated as a separate unit where the tool is made of metal or like material. In either use, however, my construction is such that the blades are inserted after the moulding of the mounting means therefor has been completed, thereby eliminating the costly and complicated processes which would be involved in mounting the blades as an incident to the moulding process, assuming such process even to be possible. Further, the separate moulding operations enable the use of the slicer device with a tool having a handle of metal or some other material other than plastic.

I claim as my invention:

1. A device for slicing green beans or similar vegetables longitudinally comprising a plurality of parallel laterally spaced blades, and mounting means for the blades comprising a first continuous annular moulded plastic member having a laterally extending annular flange, recesses opening inwardly and in one direction only laterally formed in opposite walls of the flange to receive the ends of said blades, and a continuous annular molded plastic cap member adapted to be slipped onto said annular flange after said blades have been inserted and secured by an interflowed bond of the material on said annular flange to retain said blades in said recesses.

2. A device for slicing green beans or similar vegetables longitudinally comprising a plurality of parallel laterally spaced blades mounted on edge, and means for holding and retaining the blades comprising a first moulded plastic member having an annular flange extending laterally of

the plane of the member and defining an opening in the member, slot-like recesses formed in opposite wall portions of said flange in alinement with one another and opening through the inner wall and one only of the end walls of said flange to receive the ends of said blades tightly by insertion therein, and an annular cap member secured on said flange in surrounding relation thereto and having an inwardly extending flange overlying the end wall of said first mentioned flange to retain the blades in said recesses.

3. A mounting means for a plurality of parallel laterally spaced blades comprising a first moulded integral plastic member defining an opening formed therein in which the blades are intended to be disposed in fixed position and having recesses therein opening to the opening in said member and in one direction laterally of the plane of the member to permit blades to be inserted and extend across the opening, said recesses terminating short of the surface in the opposite direction to leave portions of said member giving support to the blades in one direction laterally of the plane of the member and an annular member adapted to be secured to said first member after the blades have been inserted and overlying the lateral openings of said recesses to retain the blades in the recesses.

4. A mounting means for a plurality of parallel laterally spaced blades comprising a first unitary moulded plastic member having an annular flange extending laterally of the plane of the member defining an opening in the member, recesses for the reception of the ends of the blades to be supported in the mounting means formed in opposite wall portions of the flange and opening through the inner walls and through only one end wall of said flange, and a cap member secured on said annular flange to close the openings of said recesses through the end wall of said flange.

5. A green bean or similar vegetable slicing attachment for a kitchen tool comprising a plurality of parallel laterally spaced blades mounted on edge, and mounting means for the blades comprising a first annular moulded plastic member having a laterally extending annular flange and a radially outwardly extending flange, slot-like recesses formed in opposite walls of said laterally extending flange, said recesses opening inwardly and in one direction only laterally to receive the ends of said blades therein, and a second annular moulded plastic member secured to said first member in surrounding relation to said laterally extending flange to provide a shoulder opposite said radially extending flange, said second member having an inwardly projecting flange overlying the recesses in said first member to retain said blades tightly therein.

6. An implement for culinary use comprising a handle having an aperture formed therein, and means for slicing green beans or similar vegetables longitudinally comprising a first annular moulded plastic member having a laterally extending annular flange received within the aperture in the handle and an annular shoulder extending radially outwardly to overlie the handle and limit the insertion of the member into the aperture in the handle, recesses formed in opposite wall portions of said member, said recesses opening inwardly and also through the end wall of said flange, a plurality of parallel laterally spaced blades extending across the aperture with their ends received in said recesses, and a second annular plastic member secured to said flange in surrounding relationship to the portion projecting through the handle and bearing against the handle to clamp the same firmly between said second member and the shoulder of said first member, said second member having an inwardly extending flange overlying the end of said first flange to retain said blades in the recesses.

7. A utensil for culinary uses comprising a moulded plastic handle, an aperture formed in said handle, recesses formed in opposite wall portions of the handle defining the aperture, said recesses opening to the aperture and in one direction only laterally to the plane of the aperture, a plurality of laterally spaced parallel blades extending across said aperture with the ends of the blades received in said recesses, and a continuous annular plastic member adapted to be secured to said handle by an interflowed bond of the plastic material and having a portion overlying the lateral openings of said recesses to retain said blades in the handle.

8. A utensil for culinary uses comprising a moulded plastic handle having an aperture formed therein, a depending flange surrounding the aperture, recesses formed in opposite wall portions of said flange, said recesses opening to the aperture and in one direction only laterally to the plane of the aperture, a plurality of laterally spaced parallel blades extending across said aperture with the ends of the blades received in said recesses, and a continuous annular plastic member adapted to be secured in said handle and having a portion overlying the lateral openings of said recesses to retain said blades in the handle.

9. A utensil for culinary uses comprising a moulded plastic handle having an aperture formed therein and cut back in one face about the aperture to form an annular shoulder, a depending flange surrounding the aperture to give added thickness to the handle at the aperture, slot-like recesses formed in opposite inner wall portions defining the aperture, said recesses opening to the aperture and through the annular shoulder only, a plurality of laterally spaced parallel blades extending across said aperture with the ends of the blades received in said recesses, and an annular member received in the cut back portion of the aperture and overling the shoulder to close the recesses and retain the blades rigidly therein.

10. A device for slicing green beans or similar vegetables longitudinally comprising a blade holding means including a first moulded member of plastic material having an annular flange extending laterally of the plane of the member and defining an opening in the member, slot-like recesses formed in opposite wall portions of said flange in alignment with one another and opening through the inner wall and through one only of the end walls of said flange, a plurality of parallel, laterally spaced blades mounted in said holding means by insertion with the ends of each blade in aligned recesses through the open end wall of said flange, said blades being secured firmly in said recesses by a flow of plastic compound thereabout, and an annular molded plastice cap member secured on said annular flange by an interflowed bond of the plastic material in overlying relation to the end wall of said annular flange to close the openings of said recesses through the end wall of said flange.

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