Aug. 6, 1935. G. N. COUGHLAN 2,010,222

STRING BEAN PREPARING INSTRUMENT

Filed March 21, 1934

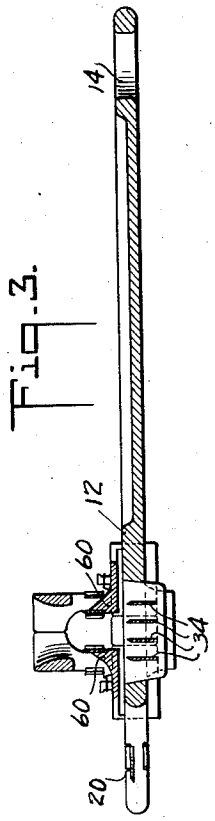


Fig. 3.

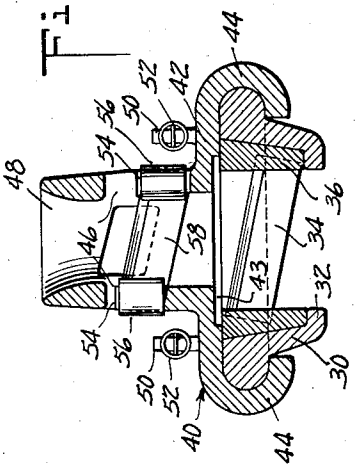


Fig. 4.

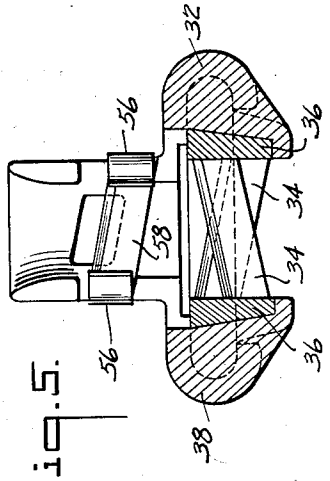


Fig. 5.

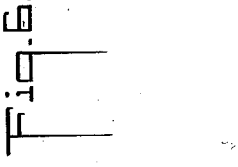


Fig. 6.

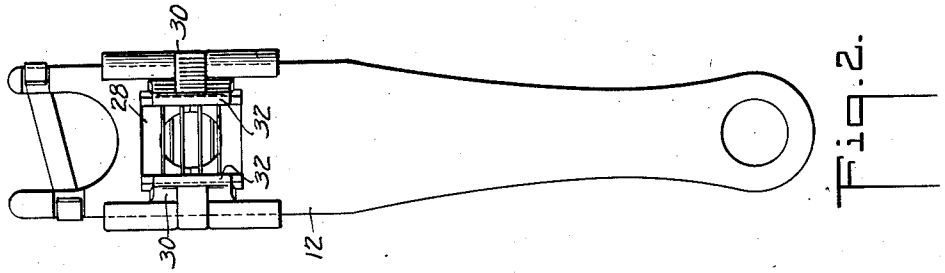


Fig. 2.

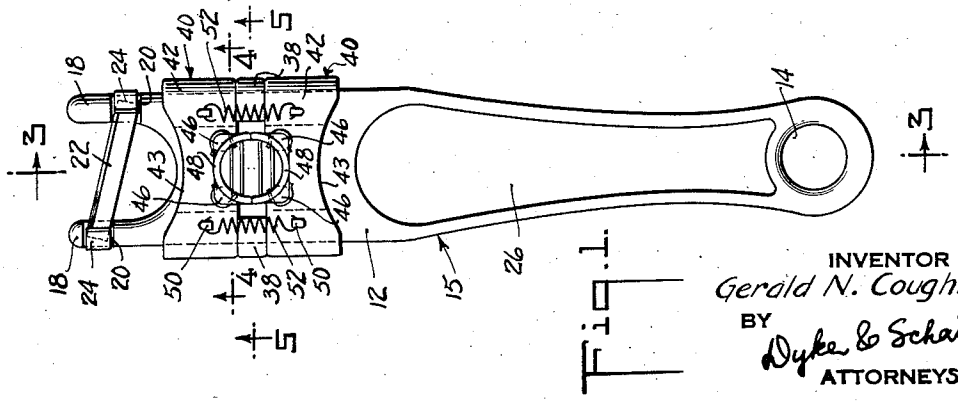


Fig. 1.

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Patented Aug. 6, 1935 2,010,222

UNITED STATES PATENT OFFICE

2,010,222

STRING BEAN PREPARING INSTRUMENT

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Application March 21, 1934, Serial No. 716,594

9 Claims. (Cl. 146—170)

The subject of this invention is a trimming instrument particularly for topping, stringing, and slicing string beans in preparing them for cooking.

String beans, and even to a considerable degree the so-called stringless beans, have woody indigestible tips and side strings. When these are left on the beans they make them relatively unpleasant to eat. The most desirable way to serve string beans is topped, strung, and sliced endwise, but this is a laborious hand operation with an ordinary knife.

It is an object of this invention to provide a simple, inexpensively constructed instrument which will perform the above operations easily and effectively.

Certain particular objects of this invention are to insure that the cutting will be done with a shearing action; to provide an improved means for removably securing the cutting blades; and to provide improved slide means to allow the bean guideways and stringing knives to yield resiliently to accommodate themselves to the varying width of the beans.

Further objects will appear in the course of the following detailed description.

In the drawing,

Fig. 1 is a top plan view of the instrument;

Fig. 2 is a bottom view thereof;

Fig. 3 is a longitudinal vertical section on line 3—3, Fig. 1;

Fig. 4 is an enlarged transverse vertical section on line 4—4, Fig. 1;

Fig. 5 is an enlarged transverse vertical section on line 5—5, Fig. 1; and

Fig. 6 is a detail view of the blade-holding clip.

The instrument comprises a handle 12, having a hole 14 therein for hanging up the instrument. The handle has parallel sides for about half its length, and is then curved in as at 15.

At the end opposite the hole 14 the handle is cut out, leaving a pair of horns 18, 18. These horns have flat grooves 20, 20, extending at right angles to the edges of the handle, in which a narrow topping blade 22 seats, angled downwardly to the right. I preferably form the grooves deeper toward their inner ends, which helps seat the blade in proper position. Spring clips 24, of lyre shape, are slipped thereon and hold the blade in place. The shape of these spring clips enables them to be slipped on readily, locks them in place after they are slipped on, and provides small handles by which they can be slipped off to replace the blade. Alternatively, the clips could be formed as integral end portions of the blades.

The handle 12 is dished at 26, thereby saving metal while retaining adequate strength, and providing a thumb hollow for easy holding.

Near the cut-out 16 there is a square hole 28 formed in the handle, on each longitudinal side of which a wall 30 extends down, sloping inwardly and terminating in an inwardly bent flange 32.

A gang of parallel slicing knives 34 is molded in slugs 36, 36 whose outer sides slope inwardly. These blades are slanted, alternate ones in opposite directions. This blade group fits in aperture 28. The aperture is as long as the width of the largest string bean anticipated. This mounting makes the slicing knives easily and quickly removable for cleaning or for replacement.

On each side of handle 12 and integral therewith, midway of aperture 28, there is a U-shaped lug 38 projecting out around the edge of the handle and merging into wall 30, as seen in Fig. 5.

A pair of cup members 40, 40 fit on handle 12, one on each side of lugs 38. These cup members are slid onto the handle from the opposite ends. Each cup member consists of a base 42, which is cut back as at 43, a curled slide-flange 44 at each side, a pair of posts 46, and a bean guide 48. The bean guides slant inwardly with curvature diminishing to practically zero at the bottom of the guide portions. The under side of each cup member 40 is recessed centrally as at 45 so as to have a portion resting on each slug 36 to hold the knives 34 in place, but to eliminate the frictional resistance of the center part against the sliding of the cups. Alternatively the handle 12 might be recessed centrally under the cup members.

Each cup member is slidable away from lugs 38, but each is limited in its motion toward the other cup member by these lugs. The lugs and the cup members are flush on the top and edges, and provide an attractive flush surface. The lugs serve also to reinforce walls 30, which must be narrow to leave slideways for the cup member flanges and on which the instrument will frequently fall when dropped onto a table or into a drawer.

Hooks 50 are formed on the upper surfaces of the cup members, one at each side, and coil springs 52 are looped thereon, one on each, under a slight tension. These springs tend to hold both cup members against the stop lugs 38, centering them over the knife grid, but either or both can slide away against the tension of the

springs. Locating the springs on the same side of the slide bearings as the bean guides gives very noticeably less frictional resistance against sliding when a fat bean tries to push the cup members apart, because twisting and jamming is avoided. However, these springs may be located on the under side to give a neater appearance.

The handle 12 is reduced in width between the cup slide portion and the extremity of the grip end so that a cup member can be placed directly down on the handle member, the guide flanges clearing the sides, and slid longitudinally into position. This makes assembly easier.

The posts 46 on each cup member have perpendicular flat grooves 54 formed in the inner faces thereof, at different levels, like grooves 26. Spring clips 56, identical with springs clips 24, hold blades 58 in these grooves. The cup members are exact duplicates, so when assembled these blades slant at opposite angles. The base members slant up behind the blades, as seen at 60, providing backing for the blades and deflectors for the bean strings. The top of the string aperture, and the deflector, slant parallel to the blade edge. The blade edges are spaced about equal distances below and in from the nearest edge of the bean guides 48, as seen in Fig. 3, whereby adequate clearance for the string is secured with little variation of depth in the stringing cut when the bean is forced in at various angles.

Operation

To prepare string beans for cooking the user holds this instrument in his left hand with this thumb resting in the thumb hollow 26. He takes a string bean in his right hand and taps first one end and then the other down over the topping blade at the end of the instrument, thus lopping off the ends of the bean.

Then with the cup facing to the right and the width of the bean extending longitudinally of the handle he pushes the bean down into the cup. The bean is held for stringing at the same angle as for topping, and the position is easier for the hand. Due to the tapered shape of the bean, the funnel shape of the inside of the cup, and the light spring action, the cup members spread and retract to conform to the varying width of the bean. Both cup members are free to move, and hence the operator will not find himself jamming the bean too tight against one side or holding it away from one side, as might be the case if one of the cups were stationary. As a result the stringing knives trim off evenly gauged strips from the sides in removing the strings.

The opposite shear of the stringing blades, and of the slicing blades, have centralizing effects on the bean.

The stringing knives remain parallel as they slide back, and hence there is maximum removal of string with minimum waste.

As the bean continues on past the stringing knives it engages and is pushed through the slicing knives. These slice the beans endwise, making them so they can be cooked more quickly and more tenderly, and more attractive when served. When the bean is pushed about half way through, the operator grasps the lower half, pulls it the rest of the way through, and deposits it in a pan, while the tops and strings fall on a table top or into a suitable receptacle.

While I have illustrated and described a preferred embodiment of my invention, it will be understood that the novel features which I have devised can be utilized in various other arrangements and combinations without departing from the scope of my invention.

I claim:

1. A bean trimming instrument comprising a handle, stop means thereon, a pair of cup members slidable on said handle longitudinally thereof, one at each side of said stop means, a stringing knife mounted on each cup member and slidable therewith and extending transverse to the handle member, spring means tending to draw the cup members together and against the stop means, and a plurality of slicing knives mounted in the handle member under the cup members, said slicing knives extending transversely of the handle member.

2. A bean trimming instrument having a handle member, cup members thereon, one of said cup members being of the general shape of an oblong with one long side open, its bent around ends embracing the edges of the handle member and said cup member being slidable longitudinally of the handle member, said handle member having parallel edges on which said cup member slides, the edges, beyond the slide portion, being reduced, for a distance as great as the length of the slidable cup member, to a width less than the distance between the bent around portions of the slidable cup member.

3. A bean trimming instrument having a pair of spaced post portions, shallow flat grooves in same, a blade seated in said grooves, and spring clips embracing the front face of the blade and the rear face of the post at each end of the blade.

4. In a bean trimming instrument a pair of spaced post portions, a flat groove in each, a blade bridging the post portions, and lying in the grooves, and a spring clip, shaped generally like a three-quarter circle, securing each end of said blade to a post portion.

5. In a bean trimming instrument a handle member, an aperture therein, a pair of downwardly and inwardly extending walls formed on said handle member below and at the side edges of said aperture, a gang of transversely extending slicing knives held by said walls, said gang comprising two side slugs embedding a plurality of knives, the side edges of said handle member near said aperture being straight and parallel, a pair of U-shaped lugs formed around the sides of the handle member opposite the center of the aperture and merging with the said walls on the underside, a pair of cup members slidably embracing said handle member, one to the front of said lugs and one to the rear of same, the edges of said cup members curling around the edges of the handle member and extending in a less distance than the above-mentioned walls are spaced in, hook means on said cup members, tension spring means joining said cup members to each other by said hook means, each of said cup members carrying a partial cup to guide a string bean and a stringing blade gauged by said partial cup to shave a thin strip from the edge of an inserted string bean.

6. A bean trimming instrument having a handle member, an aperture therein, a knife gang comprising a pair of slugs and a set of slicing knives held thereby, said knife gang fitting in said aperture with the slugs extending longitudinally of the handle member, cup members on the handle member over the knife gang, at least one of said cup members having end portions bent around the edges of the handle member and be-

ing slidable longitudinally of the handle member, said slidable cup fitting closely over the edges of the handle member and the slugs, whereby to hold the knife gang in place, and being recessed intermediately, whereby to reduce frictional resistance.

7. Device of claim 3, in which the spring clip is lyre shaped to bear against the front of the blade and the rear of the post, to provide an easy slide thereover and an easy grip for removal.

8. A bean trimming instrument comprising a handle, stop means thereon, a pair of cup members slidable on said handle along some given directional line, one at each side of said stop means, a stringing knife mounted on each cup member and slidable therewith and extending transverse to the line along which the cup members are slidable, spring means tending to draw the cup members together and against the stop means, and a plurality of slicing knives mounted in the handle member under the cup members, said slicing knives extending transversely of the line along which the cup members are slidable.

9. In a bean stringer and slicer, a pair of cup members bearing stringing knives mounted in generally parallel planes and being oppositely inclined to give an opposite shearing cut at each side, and a gang of slicing knives mounted a short distance below the stringing knives in planes generally parallel thereto.

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