

SPECIFICATION

A cutting implement

This invention relates to a cutting implement and, more particularly, to a pastry dough cutter.

- 5 Pastry dough cutters have usually consisted of one or more cutter wheels or discs mounted on a single shaft. Cutters having a plurality of cutter wheels are generally adjustable to cut a sheet of pastry dough into strips of various widths by
10 adjustably positioning the cutter wheels along the shaft.

- Generally such cutters are of rather complex structure involving numerous elements, generally formed of metal, and due to their complexity are
15 not readily adjustable to cut a sheet of pastry dough into strips of varying widths.

- U.S. Patent Specification No. 663,222 is directed to a device for cutting noodle dough and provided with cutting discs journaled on a
20 common axle for cutting the dough into strips of varying widths by inverting the device. However, the structure proposed therein is of rather complex construction thereby requiring the production of numerous separate components.

- 25 The object of the present invention is to provide an improved roll type cutting implement particularly suited for use as a pastry tool.

- According to this invention there is provided a cutting implement comprising a body portion
30 provided with means for rotatably journaling at least three cutter discs, at least one of the discs being rotatable in a plane about a first axis normal to the said plane, at least two other of the said discs being rotatable about a second axis
35 longitudinally spaced apart from, and parallel to, the first axis, one of the said two other discs being located to one side of the said plane of rotation, and the other of the said two other discs being
40 located to the other side of the said plane of rotation, the arrangement being such that one, two or three of the discs may be selectively engaged with a sheet of material to be cut, to enable either trimming of the material, or cutting
45 of the material into relatively wide strips or cutting of the material into relatively narrow strips.

- Preferably the said one disc is mounted for rotation at a fixed position on a first shaft, coincident with the said first axis, the said two other discs are mounted for rotation on a second
50 shaft, coincident with the said second axis, and the discs are arranged for cutting engagement with a common surface.

- So that this invention may be better understood and so that further features thereof may be
55 appreciated, a cutting implement in accordance with the invention will now be described by way of example and with reference to the accompanying drawings, in which:

- 60 Figure 1 is a perspective view of a preferred embodiment of a pastry roll cutter in accordance with this invention, shown cutting relatively narrow strips of pastry dough;

Figure 2 is a perspective view of the pastry roll cutter of Figure 1, shown being utilised as a pastry

- 65 dough trimmer;

Figure 3 is a perspective view of the pastry roll cutter of Figure 1, shown cutting relatively wide strips of pastry dough;

- 70 Figure 4 is a longitudinal cross-section, somewhat enlarged, of the pastry roll cutter of Figures 1 to 3;

Figure 5 is a cross-section taken in the direction of the arrows 5—5 of Figure 4;

- 75 Figure 6 is a cross-section taken in the direction of the arrows 6—6 of Figure 4; and

Figure 7 is a perspective view of an integral moulding in accordance with this invention.

- Referring first to Figures 1, 2 and 3, a pastry roll cutter, indicated generally at 10, comprises a body
80 portion having spaced apart side walls 12 and 14 connected by an elongate top wall portion 16 defining a longitudinal direction. In the preferred embodiment illustrated, the top wall portion 16 comprises an arcuate extension of the side walls
85 12 and 14. The side walls 12 and 14 are maintained in generally parallel relationship as will become clearer as the description proceeds.

- The preferred embodiment of the pastry roll cutter 10 includes two shafts 18 and 20 rotatably
90 journaled generally in the body portion and, more specifically, between the spaced apart side walls 12 and 14. The shafts 18 and 20 are in longitudinally spaced apart parallel relation, generally, but not necessarily, on a common
95 horizontal plane.

- In the preferred embodiment of the pastry roll cutter 10, three cutter discs 22, 24 and 26 are provided and one disc 22 is operatively associated
100 with one shaft 18 and the other two discs 24 and 26 are operatively associated with the other shaft 20.

- As will be seen from Figures 1, 2 and 3 illustrating the pastry roll cutter 10 in use, a sheet of pastry dough 28, or the like, is shown for
105 purposes of illustration as being a generally horizontal planar surface such as might be supported on a pastry board.

- In Figure 1 it will be seen that when a user grasps the side walls 12 and 14 of the pastry roll
110 cutter 10 between the thumb and index finger and traverses the pastry roll cutter 10 across the pastry dough sheet 28 with all three cutter discs 22, 24 and 26 in rolling, cutting engagement with the dough 28, two relatively narrow strips 30 and
115 32 of dough are cut from the sheet of pastry dough 28. It will be appreciated when utilizing the pastry roll cutter 10 in the mode illustrated in Figure 1 wherein the discs 22, 24 and 26 are of generally equal diameter, the body portion of the
120 cutter is generally horizontal to the plane of the support surface for the pastry dough sheet 28 when the shafts 18 and 20 are on a generally common horizontal plane.

- It will be appreciated that the shafts 18 and 20
125 need not necessarily be on a common horizontal plane relative to the body portion of the pastry roll cutter 10 since such interrelationship, as well as the longitudinal spacing between the two parallel shafts 18 and 20, may be selectively varied

depending upon the diameters of the cutter discs 22, 24 and 26. In this latter regard, it is generally only necessary that the cutter discs on a given shaft be of the same diameter for the pastry roll cutter 10 to function in accordance with this invention.

In Figure 2 it will be seen that the body portion of the pastry roll cutter 10 is presented in rolling cutting engagement with the pastry dough sheet 28 with the common plane of the shafts 18 and 20 other than horizontal and with only disc 22 in rolling cutting engagement with the pastry dough sheet 28. This would normally be the case when trimming a sheet of pastry dough to a desired geometrical configuration.

Turning to Figure 3, it will be appreciated that a user may present only cutter discs 24 and 26 in rolling cutting relation to the pastry dough sheet 28 so as to cut the sheet to form a relatively wide strip 34 of pastry dough. It will be appreciated that in the preferred embodiment illustrated, a user therefore presents the pastry roll cutter 10 in cutting relation to the pastry dough sheet 28 with the common plane of the shafts 18 and 20 inclined relative to the pastry dough sheet 28.

Turning briefly to Figure 7, it will be appreciated that the pastry roll cutter 10 is illustrated as being formed as an integral moulding such as might be formed by conventional injection moulding techniques from a suitable synthetic polymer, such as polypropylene, high density polyethylene, etc. having suitable physical properties, for example substantial rigidity at ambient temperatures, etc. It will be seen that the body portion of the pastry roll cutter 10 comprises side wall portions 12 and 14 and a coextensive arcuate top wall portion 16 and, for purposes of assembly of the components of the pastry roll cutter 10 into operative relationship as shown in Figures 1 to 3, the side and top wall portions are folded back upon themselves along a hinge portion indicated generally at 34. It will be appreciated that the hinge portion indicated generally at 34 need not necessarily be of the living hinge type since once the several components comprising the pastry roll cutter 10 are separated from the integral moulding shown in Figure 7 and operatively assembled in cooperative relation, it is generally not necessary repeatedly to hinge the side wall and top wall portions 12, 14 and 16, respectively about the longitudinally extending hinge portion 34.

From Figure 7, it will be seen that the shaft 18 and its associated cutter disc 22 would be broken off, or otherwise severed from, the side wall portion 14 at the point generally indicated 38 normally comprising a sprue inter-connection of relatively small diameter between one end of the shaft 18 and the side wall portion 14. In a similar manner, the shaft 20 and its associated cutter discs 24 and 26 would be severed at the location of a sprue connection of one end of the shaft 20 with the side wall portion 12 as indicated generally at 40.

As will further be seen from Figure 7, the

interior wall surfaces 13 and 15 of the side wall portions 12 and 14, respectively, are provided with integral generally interlocking tabs, which in the embodiment illustrated comprise one centrally disposed tab 42 carried by wall portion 12 which cooperates with two spaced apart tabs 44 and 46. The tab 42 has an arcuate surface 48 complementary to the arcuate interior surface 15 of the associated top wall portion 16, thus ensuring that in assembled relationship the side wall portions 12 and 14 are generally parallel. As will become more clear as the description proceeds, the tabs, and particularly the tab 42, prevent the upper portion of the pastry roll cutter 10 from being flattened. The tabs 44 and 46 preferably coact with the tab 42 to limit, in conjunction with a shaft journaling means to be described, skewing of the side wall portions 12 and 14 out of parallel relationship. It will be understood that it is not necessary that the tabs 42, 44 and 46 be of a press-type fit as will become clearer as the description proceeds.

In Figure 7, it will be seen that the lower portions of the side walls 12 and 14 are provided with a portion of a means for rotatably journaling the shafts 18 and 20 in the operative relationship shown in Figures 1, 2 and 3.

In this regard and as is best seen from a comparison of Figures 4 and 7, the means for rotatably journaling the shafts 18 and 20, in the preferred embodiment, comprises keyhole slots 50 so positioned and sized as to receive rotatably the reduced diameter shaft portions 52 of shafts 18 and 20 and so that shafts 18 and 20 are disposed on a generally common plane in spaced apart parallel relationship.

In the preferred embodiment illustrated, the cutter discs 22, 24 and 26 are integral with, and thus fixed relative to, their respective shafts 18 and 20. In the preferred embodiment 10 illustrated, the shaft 18 includes side wall spacer means comprising shaft portions 54 extending laterally, and generally to an equal extent, from each side of the cutter disc 22. The combined length of the shaft portions 54 and width of the cutter disc 22 is such that when the reduced diameter portion 52 of the shaft 18 is pressed into two opposed respective keyhole slots 50, the side walls 12 and 14 are set in generally parallel relationship and the outward hub portions 56 of shafts 18 and 20 function to hold the side wall portions 12 and 14 in the closed position as shown in Figures 1, 2 and 3.

It will be appreciated from Figure 7 and other figures to be described, that the shaft spacer portions 54 need not be provided on both shafts 18 and 20, and in fact are not present on shaft 20.

In this latter regard, and turning specifically to Figures 5 and 6, it will be seen that the spacing of the integral cutter discs 24 and 26 on their respective shaft 20 is such that the outwardly disposed surfaces of the cutter discs 24 and 26 maintain the side wall portions 12 and 14 in parallel relation and the hub portions 56 of the shaft 20, as in the case of the hub portions 56 of

the shaft 18, assist in holding the side wall portions 12 and 14 in the closed position.

As is best seen in Figures 5 and 6, the cutter disc 22 is preferably generally equidistantly spaced from the interior side wall surfaces of the side wall portions 12 and 14 and the cutter discs 24 and 26 are each laterally disposed relative to the cutter disc 22 so as to provide the required cooperative relationship, as is best appreciated from Figures 1, 2 and 3 and the foregoing description.

Briefly returning to Figure 6, the coacting tabs 42, 44 and 46 may, if desired, be of a press-type fit to assist in maintaining the elements of the pastry roll cutter 10 in their assembled relationship.

It will be understood that while the preferred material of construction for the pastry roll cutter is a high density polymeric material such as polyethylene, other synthetic polymers, as briefly referenced above, can be used. Further, while only one specific embodiment has been set forth for the purposes of illustration, it is to be understood that changes and alterations are possible. It will be appreciated that the cutter discs may be of unequal diameter and may be rotatably journaled on their respective shafts if forming in such manner is expedient. Further, the discs may be somewhat flatter than specifically shown provided that they terminate in a peripheral edge sufficiently sharp and sufficiently rigid to cut "plastic", i.e. pliable, material with which the device is utilised.

Finally, it will be noted that another aspect of the pastry roll cutter 10 of this invention resides in the fact that the longitudinal spacing of the shafts 18 and 20 on a generally common plane, together with the utilisation of cutter discs of generally equal diameter, causes the discs on respective shafts to be interdigitated, and thus the linear extent of contact of the cutter discs with the plastic material, such as pastry dough, to be cut enables the user, when utilising the pastry roll cutter as shown in Figure 1, to cut even, narrow arcuate strips of dough.

CLAIMS

1. A cutting implement comprising a body portion provided with means for rotatably journaled at least three cutter discs; at least one of the discs being rotatable in a plane about a first axis normal to the said plane; at least two other of the said discs being rotatable about a second axis longitudinally spaced apart from, and parallel to,

the first axis; one of the said two other discs being located to one side of the said plane of rotation and the other of the said two discs being located to the other side of the said plane of rotation, the arrangement being such that one, two or three of the discs may be selectively engaged with a sheet of material to be cut, to enable either trimming of the material, or cutting of the material into relatively wide strips or cutting of the material into relatively narrow strips.

2. A cutting implement according to claim 1 in which the said one disc is mounted for rotation at a fixed position on a first shaft, coincident with the said first axis, the said two other discs are mounted for rotation on a second shaft, coincident with the said second axis, and the discs are arranged for cutting engagement with a common surface.

3. A cutting implement according to any one of the preceding claims, in which the body portion comprises a downwardly open member comprising opposed spaced-apart side wall portions connected by a top wall portion.

4. A cutting implement according to claim 3, in which the body portion includes means for maintaining the side wall portions in the said spaced apart relation.

5. A cutting implement according to claim 4, in which said means for maintaining said side wall portions in spaced apart relation includes interiorly disposed tab spacer means integral with said body portion and means integral with said shafts.

6. A cutting implement according to claim 2 or any claim dependent thereon in which each of the cutter discs is fixed relative to its respective shaft.

7. A cutting implement according to claim 2 or any claim dependent thereon additionally comprising means to receive the shafts so that the shafts are rotatable relative to the side wall portions.

8. A cutting implement according to any one of the preceding claims, in which the elements comprising the implement are integrally formed as a unitary moulded member for subsequent separation and assembly.

9. A cutting implement according to claim 2 or any claim dependent thereon in which the said two shafts are on a generally common plane generally horizontally disposed relative to a support surface for material to be cut.

10. A pastry cutter according to any one of the preceding claims.

11. A cutting implement substantially as herein described with reference to, and as shown in, the accompanying drawings.



the shaft 18, assist in holding the side wall portions 12 and 14 in the closed position.

As is best seen in Figures 5 and 6, the cutter disc 22 is preferably generally equidistantly spaced from the interior side wall surfaces of the side wall portions 12 and 14 and the cutter discs 24 and 26 are each laterally disposed relative to the cutter disc 22 so as to provide the required cooperative relationship, as is best appreciated from Figures 1, 2 and 3 and the foregoing description.

Briefly returning to Figure 6, the coacting tabs 42, 44 and 46 may, if desired, be of a press-type fit to assist in maintaining the elements of the pastry roll cutter 10 in their assembled relationship.

It will be understood that while the preferred material of construction for the pastry roll cutter is a high density polymeric material such as polyethylene, other synthetic polymers, as briefly referenced above, can be used. Further, while only one specific embodiment has been set forth for the purposes of illustration, it is to be understood that changes and alterations are possible. It will be appreciated that the cutter discs may be of unequal diameter and may be rotatably journaled on their respective shafts if forming in such manner is expedient. Further, the discs may be somewhat flatter than specifically shown provided that they terminate in a peripheral edge sufficiently sharp and sufficiently rigid to cut "plastic", i.e. pliable, material with which the device is utilised.

Finally, it will be noted that another aspect of the pastry roll cutter 10 of this invention resides in the fact that the longitudinal spacing of the shafts 18 and 20 on a generally common plane, together with the utilisation of cutter discs of generally equal diameter, causes the discs on respective shafts to be interdigitated, and thus the linear extent of contact of the cutter discs with the plastic material, such as pastry dough, to be cut enables the user, when utilising the pastry roll cutter as shown in Figure 1, to cut even, narrow arcuate strips of dough.

CLAIMS

1. A cutting implement comprising a body portion provided with means for rotatably journaled at least three cutter discs; at least one of the discs being rotatable in a plane about a first axis normal to the said plane; at least two other of the said discs being rotatable about a second axis longitudinally spaced apart from, and parallel to,

the first axis; one of the said two other discs being located to one side of the said plane of rotation and the other of the said two discs being located to the other side of the said plane of rotation, the arrangement being such that one, two or three of the discs may be selectively engaged with a sheet of material to be cut, to enable either trimming of the material, or cutting of the material into relatively wide strips or cutting of the material into relatively narrow strips.

2. A cutting implement according to claim 1 in which the said one disc is mounted for rotation at a fixed position on a first shaft, coincident with the said first axis, the said two other discs are mounted for rotation on a second shaft, coincident with the said second axis, and the discs are arranged for cutting engagement with a common surface.

3. A cutting implement according to any one of the preceding claims, in which the body portion comprises a downwardly open member comprising opposed spaced-apart side wall portions connected by a top wall portion.

4. A cutting implement according to claim 3, in which the body portion includes means for maintaining the side wall portions in the said spaced apart relation.

5. A cutting implement according to claim 4, in which said means for maintaining said side wall portions in spaced apart relation includes interiorly disposed tab spacer means integral with said body portion and means integral with said shafts.

6. A cutting implement according to claim 2 or any claim dependent thereon in which each of the cutter discs is fixed relative to its respective shaft.

7. A cutting implement according to claim 2 or any claim dependent thereon additionally comprising means to receive the shafts so that the shafts are rotatable relative to the side wall portions.

8. A cutting implement according to any one of the preceding claims, in which the elements comprising the implement are integrally formed as a unitary moulded member for subsequent separation and assembly.

9. A cutting implement according to claim 2 or any claim dependent thereon in which the said two shafts are on a generally common plane generally horizontally disposed relative to a support surface for material to be cut.

10. A pastry cutter according to any one of the preceding claims.

11. A cutting implement substantially as herein described with reference to, and as shown in, the accompanying drawings.