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(54) Titre : APPAREIL ROTATIF POUR COUPER

(57) Abrégé(suite)/Abstract(continued):

longitudinally cuts the food product before it passes through the cutting plane. The apparatus according to the invention also utilizes separate drive motors for the feed conveyor and for the cutting wheel. In order to prevent deflection or deformation of the larger cutting wheel, a rim stabilizer (60) engages the cutting wheel rim to prevent any deflection of the rim which may cause deflection of the cutting knives as the cutting wheel rotates.



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(21) International Application Number: PCT/US95/06607 (22) International Filing Date: 30 May 1995 (30.05.95) (30) Priority Data: 08/250,924 31 May 1994 (31.05.94) US (71) Applicant: URSCHEL LABORATORIES, INC. [US/US]; 2503 Calumet Avenue, Valparaiso, IN 46384 (US). (72) Inventor: JACKO, Michael, S.; 424 Quail Court, Chesterson, IN 46304 (US). (74) Agents: TROXELL, Bruce, H. et al.; Bacon & Thomas, 4th floor, 625 Slaters Lane, Alexandria, VA 22314 (US).		(81) Designated States: AU, CA, CN, JP, MX, European patent (AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE). Published <i>With international search report.</i> <i>With amended claims.</i> 2191798

(54) Title: ROTARY APPARATUS FOR CUTTING A FOOD PRODUCT

2191798

ROTARY APPARATUS FOR CUTTING A FOOD PRODUCT**BACKGROUND OF THE INVENTION**

The present invention relates to an apparatus for cutting a food product, more particularly, such an apparatus utilizing a rotatable cutting wheel having a plurality
5 of generally radial slicing knives which define a cutting plane.

Known devices for slicing a food product typically comprise a rotatable slicing wheel having a plurality of knives extending between a hub and a rim so as to define a cutting plane and a conveying device for conveying the food product through the cutting plane. The speed of the feed device and the rotating speed of the cutting
10 wheel are synchronized such that the food product is sliced into substantially uniform thickness slices. While generally successful, these known slicing machines have been heretofore limited to cutting the food product into slices and have been somewhat limited in the overall size of the food product which may be accommodated. The known food slicing devices also utilize a single motor to drive both the food product

feed conveyor and the rotating cutting wheel. While the use of a single motor promotes accurate synchronization of the feed means and the cutting wheel speed, it results in a complicated drive arrangement requiring numerous lubrication points and increased maintenance.

The known slicing machines have been found inadequate for slicing food products such as Iceberg and Romaine lettuce. It has been necessary to precut the
10 lettuce heads into halves or quarters before feeding them into the known slicing machines which are capable of making only a single dimension slicing cut. Thus, the known slicing machines have been utilized only to make shredded lettuce. The lettuce food products may be diced on a known dicing type of dicing apparatus, however, the size of the food product is, again, limited and the known devices are capable of producing only approximately 4,000 lbs. of food product per hour of operation. In order to properly dice a food product, such as lettuce, it is necessary for the apparatus
20 to provide more than a one dimensional cut. This requirement has heretofore rendered the known slicing devices to be inappropriate for dicing food products.

SUMMARY OF THE INVENTION

According to the present invention, there is provided an apparatus for cutting a food product comprising a cutting wheel having an axis of rotation, a hub, a generally annular rim, a plurality of relatively thin elongated first knife blades each having opposed generally
30 flat sides and opposed thin edges connecting the flat sides, each of said first blades extending radially from

the hub to the rim so as to interconnect the hub and rim and define a cutting plane when the wheel is rotated about its axis of rotation, one of said edges of each blade constituting a leading edge facing the direction of cutting wheel rotation and each leading edge being beveled and sharpened to form a cutting edge extending substantially between the hub and the rim;

at least one relatively thin second knife blade fixedly secured to and extending perpendicularly from one
10 side of each of said first knife blades and extending parallel to the axis of rotation of the cutting wheel, each said second knife blade having flat sides jointed by thin edges, one of said thin edges constituting a leading edge facing the direction of cutting wheel rotation; the leading edge of each second knife blade being sharpened to define a second cutting edge, each second cutting edge facing towards and located adjacent the cutting edge of a respective first knife blade;

first drive device arranged to rotate the cutting
20 wheel about said rotational axis;

a feed device arranged to feed a food product into the cutting plane of the cutting wheel between the hub and the rim in a feeding direction extending generally parallel to the axis of rotation of the cutting wheel;

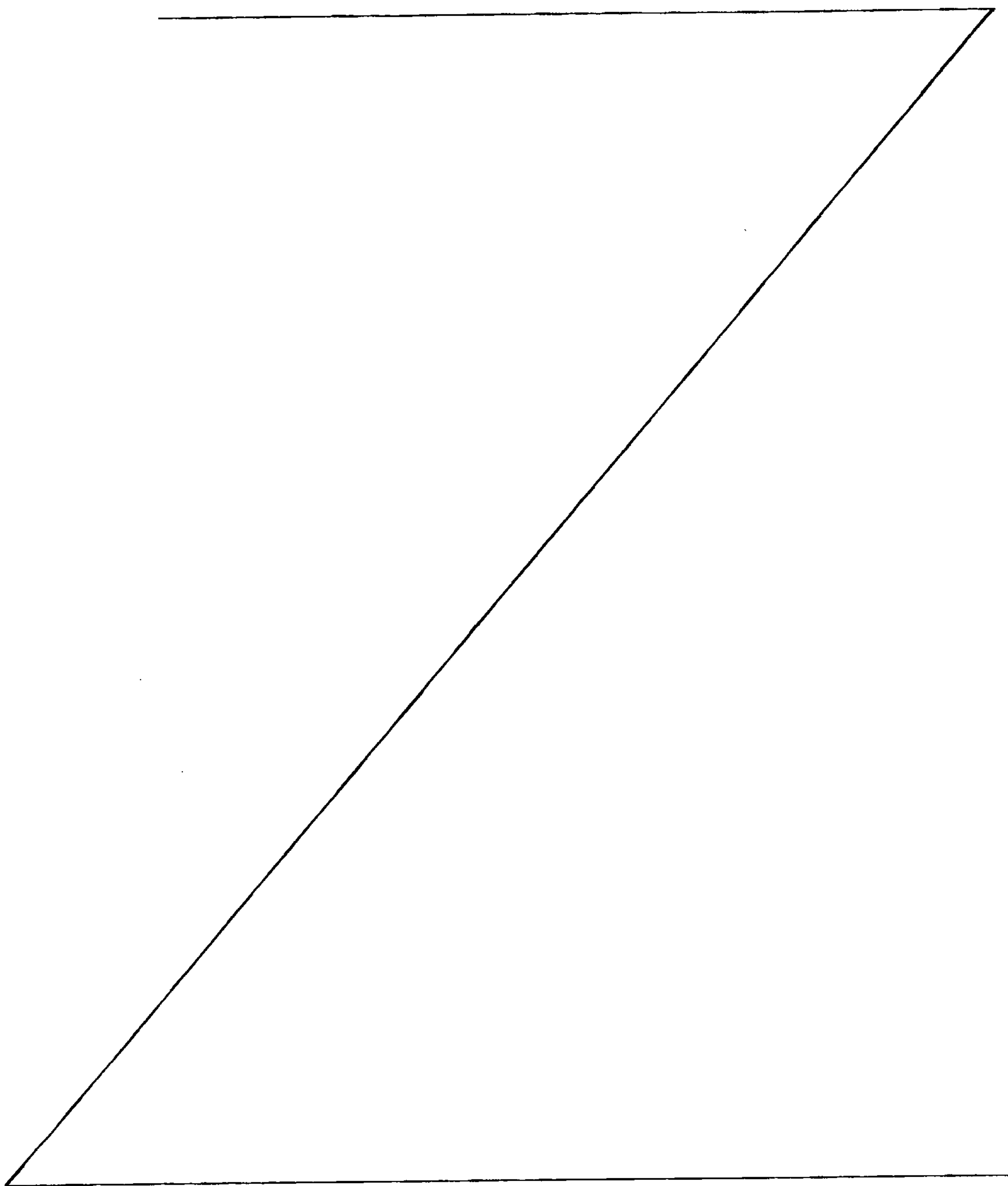
each said second knife blade secured to the one side of each first knife blade so as to extend away from the cutting plane on the side of said cutting plane opposite the side to which the food products are fed.

Preferably, the apparatus for cutting a food
30 product utilizes a cutting wheel having a plurality of knives extending between a hub and a rim in conjunction

4c

Figure 6 is a partial, end view of a cutting apparatus according to the present invention illustrating the cutting wheel of Figure 4.

Figure 7 is a partial, perspective view of the cutting device according to the present invention incorporating a single circular cutting knife.



The foregoing description is provided for illustrative purposes only and should not be construed as in any way limiting this invention, the scope of which is defined solely by the appended claims.

