

March 29, 1949.

G. W. URSCHEL ET AL

2,465,670

MACHINE FOR CUTTING VEGETABLES INTO CUBES

Filed Jan. 17, 1945

3 Sheets-Sheet 1

Fig. 1.

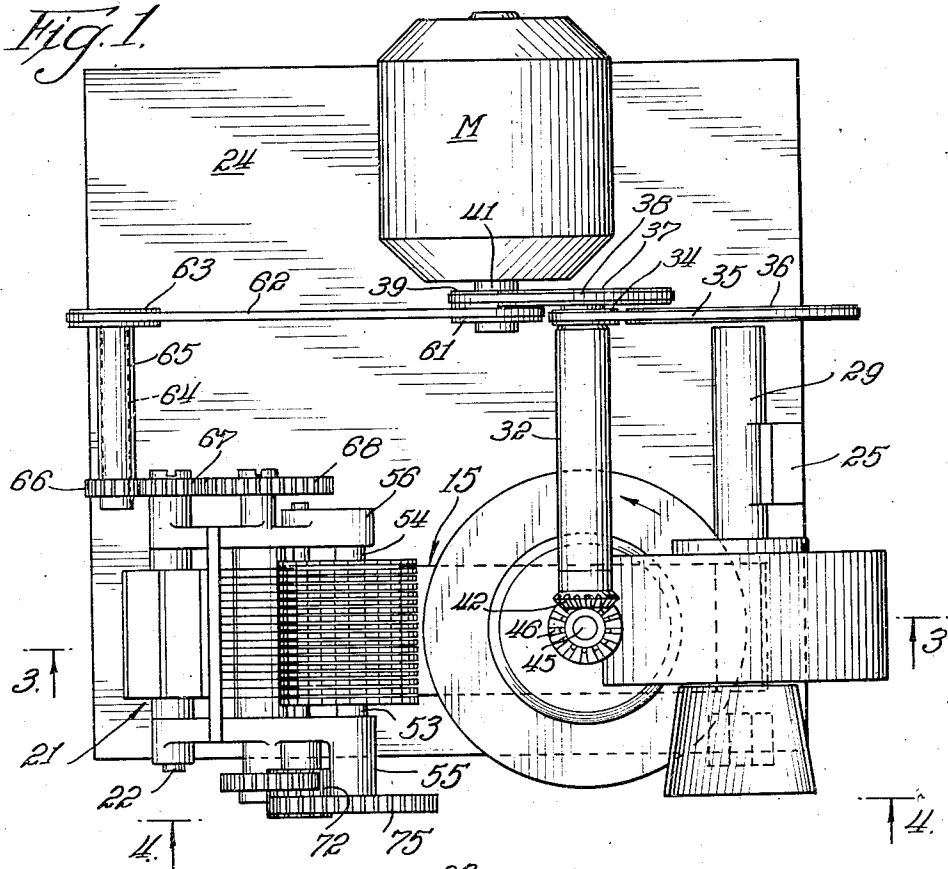
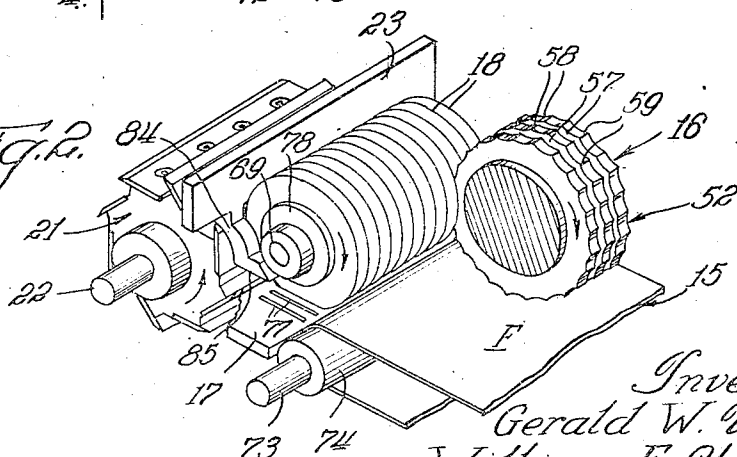


Fig. 2.



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3 Sheets-Sheet 2

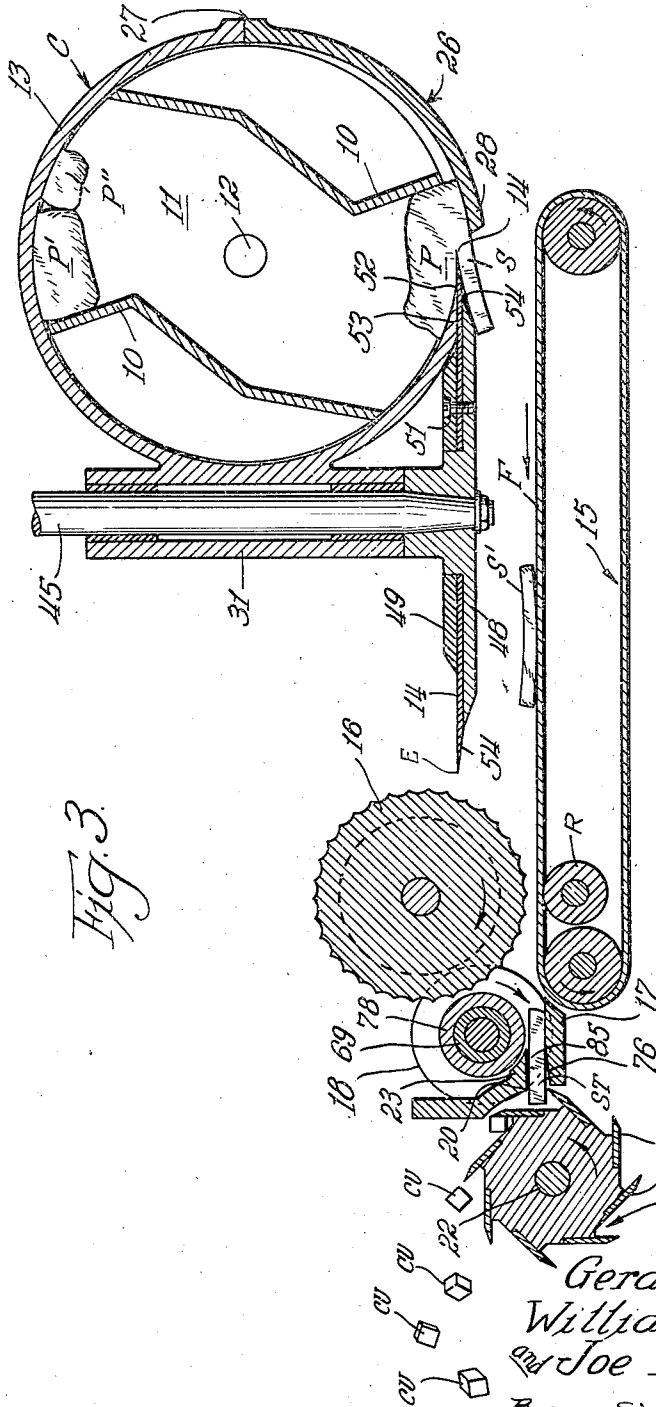


Fig. 3.

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3 Sheets-Sheet 3

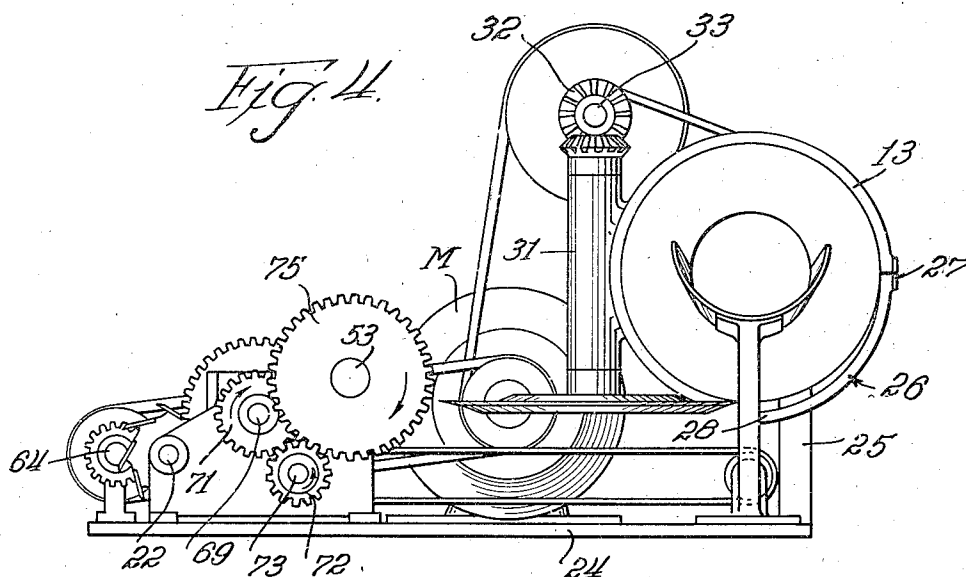
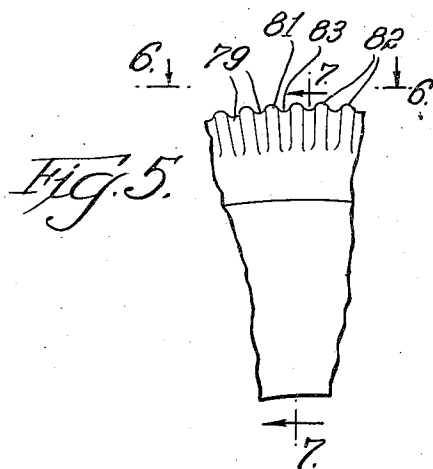


Fig. 6.



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UNITED STATES PATENT OFFICE

2,465,670

MACHINE FOR CUTTING VEGETABLES
INTO CUBES

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18 Claims. (Cl. 146—78)

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This invention concerns apparatus for section-
alizing or dividing materials into smaller discrete
portions by a series of cutting operations. The
invention is susceptible of embodiment in a ma-
chine particularly well adapted for cutting vege-
tables, pitted or cored fruits, meats and the like,
into slices, strips, cubes and flat squares or rec-
tangles. In the machine hereinafter described
the steps of slicing, cutting the slices into strips
and cutting the strips into cubes are performed
in the order recited at successive stages, and,
while certain novel features obtain in the respec-
tive physically spaced sections of the machine
where the different cutting operations occur,
there is a decided interdependence of these fea-
tures in adapting the machine to successfully per-
form the complete series of operations, wherefore
a unity or integrated whole exists in the various
machine sections.

One important object of the invention is the
provision of an improved slicing constituent
wherein the material to be sliced is propelled cen-
trifugally about a chamber wall cyclically across
a wall opening and against the cutting edge of a
rotating disc knife which slices portions from the
material and facilitates their discharge outward-
ly through the wall opening. Such an arrange-
ment is fast in operation since the material can
be fed into the chamber without pre-arrange-
ment and also in view of the high speed with
which the material is propelled into the slicing
knife. Because of the centrifugal force acting on
the material in the slicing chamber, it auto-
matically assumes a fixed position with respect
to the chamber wall so the slices will have par-
allel severed faces. Only casual attention is re-
quired of the machine attendant to see that the
articles operated upon are collectively supplied
at the rate of machine capacity, as distinguished
from individual manipulation and setting of the
articles in the machine. Use of the rotating disc
knife adapts the machine for operating efficient-
ly upon meats, fruits with tough fibrous cores
and vegetables containing tough fibers or having
outer peels or skins, as those of the onion, that
tend to simply fold over the edge of a fixed knife
and clog the machine or at least cause some of
the material to be mashed upon coming in con-
tact with the thus sheathed cutting edge until
the knife is cleared.

Another object is the provision in a sectional-
izing cutting machine, of an improved arrange-
ment whereby the material in the course of pro-
cessing is caused to follow a substantially straight
path so the operating speed need not be limited

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by the necessity of changing the direction of
flow for the material. This is accomplished by
discharging the sliced material onto a straight
conveyor belt flight placed substantially parallel
to the trajectory of the discharged slices and
leading directly to a plane cutting block surface
flush therewith and comprising an element of an
assembly for cutting the slices into strips. The
arrangement is also such that the straight course
continues from the strip cutting assembly into
an assembly for cutting the strips into shorter
pieces. Straight line passage of the material
through the machine between the cutting in-
strumentality assemblies as well as within the
assemblies themselves has been found to ma-
terially increase the speed attainable without im-
minence of misoperation and clogging.

Another object is the provision in a strip-cut-
ting assembly of a bank of disc knives having
their cutting edges serrated to improve their cut-
ting efficiency and to augment their tendency to
pull the material which is to be cut into the as-
sembly. This is an additional factor contribut-
ing to the high operating speed of the machine
embodiment herein described of the invention.

A further object is the provision of a cutting
block surface with narrow grooves for receiving
edge portions of the strip-cutting disc knives for
cooperating therewith in completely severing the
material into separate strips.

A further object is the provision of a new
compressing roller structure with axially spaced
circumferential ribs cooperable with the belt
flight for compressing and feeding the sliced ma-
terial into the strip-cutting assembly and said
ribs being meshed with the strip-cutting knives
to reduce the spacing therebetween wherefore re-
siliant material being operated upon will have
less time to recover from its compressed condition
incurred between the belt flight and compressing
roller before entry between the knives and the
cutting block. This feature has special utility
when operating upon a matted layer of loose
material such as spinach leaves and stalks. The
invention further contemplated the formation of
apices on the peripheries of said roller ribs to
increase their traction with the material com-
pressed and fed thereby.

The above and other desirable objects inherent
in and encompassed by the invention will become
more clearly apparent when fully understanding
the preferred embodiment thereof hereinafter
described and shown in the accompanying draw-
ings, wherein:

Fig. 1 is a plan view of a machine constituting a preferred embodiment of the invention;

Fig. 2 is a fragmentary perspective view illustrating feed disc, strip cutting and dicing knife assemblies of the machine;

Fig. 3 is a vertical sectional view taken on the line 3—3 of Fig. 1;

Fig. 4 is a side elevational view taken as indicated by the arrows on the line 4—4 in Fig. 1;

Fig. 5 is a fragmentary side elevational view of one of the circular slicing knives;

Fig. 6 is a view taken edgewise of the knife illustrated in Fig. 5 and taken on the line 6—6 in that figure; and

Fig. 7 is a sectional view taken on the line 7—7 of Fig. 5.

The apparatus is adapted to operate upon large pieces of material such as those designated P, P' and P'' in Fig. 3. These pieces of material may be any cuttable substance such as fruit or vegetable articles or pieces of meat. Briefly, in the operation of the apparatus, impeller blades 10 carried on a plate 11 rotatable with a shaft 12 propel the sliceable pieces as P about the circular interior of a stationary wall 13. This wall comprises part of a casing C and serves to cyclically guide the pieces against the circular edge E of a rotating disc knife 14 whereby slices as S and S' are removed and deposited upon the upper flight F of a belt 15 which moves in the direction of the arrow appearing just above said belt flight.

When using the slicing complement, comprising the casing C and the slicing knife 14, the material, as fruit, vegetables and meat, operated upon is usually of a crushable nature and the feeding roller 16 will be removed so as not to press against the slices. Roller assembly 16 is contemplated for use most generally when the belt flight is loaded with a layer of compressible bunched material such as spinach or other leafy material with stems and stalks and not necessarily issued from the slicing complement. Therefore, assuming the roller 16 to be absent, the belt flight will slide the slices as S' onto the upper surface of a transfer plate 17 which cooperates with a bank of slicing knives 18 for cutting the slices into a series of strips ST. As these strips ST emerge from between the strip cutting knives 18 they are acted upon by knives 19 carried by a rotatable frame 21 which rotates with a shaft 22. Knives 19 cooperate with a cutting edge 23 of a stripper plate 23 in cutting the strips ST into dice-like cubes CU.

The apparatus is mounted upon a plate 24, which is preferably the top of a bench or table, and receives driving force from an electric motor M suitably secured to said plate. Also upon the plate 24 is a standard 25 which supports the casing C. A portion 26 of the casing wall 13 is hingedly connected at 27 to the remainder of the circular wall and is supported by means not shown in an adjustable manner whereby the distance of the lower or free end 28 of this wall portion radially of the circular wall from the edge of the slicing knife 15 may be selectively determined. A bearing 29 projects axially from the rear wall of the casing to which it is secured. This bearing contains and provides a journal for the shaft 12. Bearing 29 is connected with the upper end of the standard 25. The standard 25 in addition to supporting the bearing 29 and the casing C also supports a vertical bearing 31, Figs. 3 and 4, and a horizontal bearing 32, Fig. 1, both formed integrally with said casing. Bear-

ing 32 contains a shaft 33, Fig. 4, which has a pulley 34 fixed to its rear end as shown in Fig. 1. This pulley drives a belt 35 which is in driving relation with a pulley 36 rotatively fixed to the rear end of the shaft 12. A second pulley, 37, fixed to the shaft 33 is driven by a belt 38 and a pulley 39 which rotates with the motor armature shaft 41.

A beveled gear 42 on the front end of the shaft 33 drives a vertical shaft 45, Figs. 1 and 3, through a companion beveled gear 46. A flanged knife carrying head 48 for the disc knife 14 is secured to the lower end of the shaft 45 illustrated in Fig. 3 and a clamping plate 49 together with machine screws as 51 anchor said knife onto the head. In Fig. 3 it can be seen that the slicing knife is arranged substantially tangentially of the wall 13 at a transverse edge 52 thereof and is of sufficient diameter to project beyond such wall edge. Adjacent to its edge 52 the wall 13 has a beveled face 53 which adapts the upper flat face of the slicing knife to occupy the position of contiguity with the wall edge 52. It will also be observed that the upper face of the slicing knife 15 continues as a plane surface all the way to its circular cutting edge E while the lower face of this knife is beveled at 54 to form the cutting edge. This arrangement minimizes any tendency for the knife to deflect and disturb the position of the uncut portions of the articles as P relatively to the circular wall 13, while providing clearance at the lower edge of the knife for the slices as S to discharge tangentially onto the belt flight F.

The feeding and compressing roller 16 has an enlarged central portion 52 and reduced end portions 53 and 54 respectively journaled in bearing brackets 55 and 56 suitably supported upon the plate 24 at opposite sides of the feed belt 15. A series of circumferential grooves 57 are cut in the enlarged portion of the roller 16 to form axially spaced circular ribs 58. Prior to cutting the grooves 57 in the roller, its surface is formed with a fluted periphery so that each of the circular ribs 58 has a fluted periphery whereon there are circumferentially spaced apices 59 which improve the traction of the roller with certain kinds of material passed between the roller and the belt flight F. Power for driving the feeding and compressing roller 16 is derived from a pulley 61 on the motor armature shaft 41. From the pulley 61 the power is transmitted through a belt 62, a pulley 63 fixed to one end of a shaft 64 journaled in a bearing 65 supported on the plate 24. From the shaft 64 power is transmitted from a gear 66 and on to a gear 67 fixed to the shaft 22 which carries the dicing knife frame 21 and is journaled in the bearing brackets 55 and 56. From gear 67 driving force is transmitted to gear 68 fixed to a shaft 69 which is also journaled in the bearing brackets 55 and 56 and which carries the assembly of the slicing knives 14. The front end of the shaft 69 has a gear 71 fixed thereto and this gear meshes with and drives a wide gear 72 which is fixed to a shaft 73 journaled in the brackets 55 and 56 and carrying a pulley 74 for the feeding belt 15. The front portion of the wide gear 72 meshes with and drives a gear 75 carried upon the reduced diameter front end 53 of the roller 16. The just described power train of gears and shafts causes rotation of the feeding and compressing roller 16 (when this roller is mounted on the machine), the slicing knives 18 and the dicing knife frame

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21 in the direction indicated by the arrows respectively associated therewith in Fig. 2.

The transfer plate 17 is preferably supported at its opposite ends upon the brackets 55 and 56. The upper face of this plate is arranged generally flush with the upper periphery of the belt flight F although the advanced marginal portion of the upper face of said plate is inclined slightly downwardly as indicated at 76 in Fig. 3. Transverse grooves 77, Fig. 2, are formed in the upper face of the transfer plate for receiving lower edge portions of the slicing discs 18 to cooperate with these discs in cutting completely through the slices of material fed across the transfer plate and between said discs. The correct spacing of the discs 18 which are constrained for rotation with the shaft 69 is determined and maintained by collars 78 placed on the shaft 69 alternately with said discs.

A further expedient employed for improving the ability of the slicing discs 18 to cut the strips of material into slices is the formation of serrated cutting edges upon these discs as illustrated in Figs. 5, 6 and 7. One side of each disc is provided with a plurality of radial grooves 79 which intersect the sharpened cutting edge 81, thereby providing radially projecting sharpened edge portions 82 and radially receding sharpened edge portions 83 alternately with the portions 82. The projecting and receding sharpened edge portions 82 and 83 are offset with respect to one another axially of the discs as illustrated in Figs. 6 and 7 so that the cutting edge follows a tortuous path circumferentially about its disc. This construction augments the tendency for the knives to draw the slices into the space between them and the transfer plate, this improved drawing tendency being particularly useful when the apparatus is operating upon meat slices.

The stripper plate 23 is also preferably supported between the brackets 55 and 56. Parallel grooves extending transversely of the stripper plate are cut in its lower portion to receive the slicing discs 18 and to form stripper fingers 84 which project between said discs and prevent the slices of material from being carried around by and between the discs. Lower edges 85 of these stripper fingers guide the strips for causing them to project beyond the cutting edge 20 which cooperates with the dicing knives 19 on the rotary frame 21.

When the machine is used for sectionalizing compressible bulky material as a heterogeneously arranged mass of spinach leaves and stalks, the compressing roller 16 will be assembled as shown and preferably the casing C and the slicing knife 14 will be removed after loosening their attachment to the bracket 25. This also necessitates removal of the driving belts 36 and 38, but the time involved for effecting such adaptation of the machine is normally insignificant when considering that many tons of material may be treated thereby before changing the adaptation. Assuming the compressing roller to be installed and the casing C and the slicing knife 14 to be removed or elevated to provide greater clearance therebetween and the belt flight F, the bulky material will be deposited on the belt flight in a sufficiently thin stream or matted layer to pass between the roller and the belt flight incident to being compressed into a relatively compact mass. Positive traction of the roller with the material is enhanced by the peripheral apices 59, and downward deflection of the belt flight beneath the roller is resisted by an idler roller R, Fig. 3. When

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thus compacted, the material is more readily operated on by the strip-cutting knives 18. To minimize partial recovery of the compressed material from its compressed state prior to reaching the strip-cutting knives, these knives and the ribs on the roller 16 are meshed to reduce the distance between these assemblages. Subsequent to the knives 18 cutting the compressed material into strips, these strips are cut into short pieces by the knife assembly 21 in the above described manner.

Having thus described the preferred embodiment of the invention with the view of clearly illustrating the same, we claim:

We claim:

1. In a sectionalizing cutting machine, a chamber receivable of cuttable material, said chamber having a circular side wall wherein there is an opening which is narrow circumferentially of the wall, a rotatable knife having a circular cutting edge arranged generally tangentially to said chamber side wall and disposed with a portion of such cutting edge projected partially across said opening, impeller means rotatable in the chamber to propel cuttable material therein about said wall and against the knife cutting edge, said knife being operable to sever a slice from the material propelled thereagainst and facilitate issuance of the slice through said opening generally tangentially of the chamber side wall, means for rotating the knife to expedite such slicing of the material, a conveyor belt flight disposed for receiving the sliced material issued from said opening, a circumferentially ribbed compressing roller arranged transversely of the belt flight for cooperation therewith in compressing the sliced material and feeding the same in the direction of movement of such belt flight, a cutting block disposed on the opposite side of the compressing roller from said chamber and having a face extending transversely of the belt flight and substantially flush therewith to receive the sliced material issuing from between such flight and the compressing roller, narrow knife receiving slots formed in said cutting block face lengthwise of the belt flight, a bank of circular axially-spaced knives rotatable about an axis transversely of the belt flight, said knives being meshed with the compressing roller ribs and having portions of their cutting edges projecting into respective of the cutting block slots, means for rotating the bank of knives to cause their cooperation with the cutting block in cutting the sliced material into strips as it issues from between the compressing roller and the belt flight, a stripper bar having fingers projecting between the knives in said bank to deflect the strips from between the knives and thereby cooperate with such knives and the cutting block in issuing the strips endwise from such knives, and a dicing knife assembly comprising a blade carrier rotatable about an axis transversely of the belt flight and blades thereon carried successively against the issuing strips to cut the same into shorter particles.

2. In a sectionalizing cutting machine, a chamber receivable of cuttable material, said chamber having a circular side wall wherein there is an opening which is narrow circumferentially of the wall and has a radially outer edge at an approach side thereof and a radially inner edge at the opposite side thereof, a rotatable disc knife arranged generally tangentially to said circular wall of the chamber and disposed with a segmental portion protruding beyond said radially inner edge to place the cutting edge of the segmental portion radially inwardly of the chamber from

the approach side of said opening, impeller means rotatable in the chamber to propel cuttable material therein about the circular wall in the direction to approach said opening from its approach side just prior to traversing the same, said knife being operable to slice a portion from the material as it traverses said opening and to facilitate issuance of the sliced portion from the chamber through said opening, means for rotating the knife to expedite such slicing of the material, conveyor means having a surface disposed for receiving the sliced portion issuing from said chamber and reaching from said opening to transfer the sliced portion therefrom, a circumferentially ribbed compressing roller arranged transversely of the conveyor means surface and with the circumferential peripheries of said ribs in opposed spaced relation thereto for cooperation therewith in compressing the sliced portion and issuing the same from therebetween, the peripheries of said ribs having circumferentially spaced apices thereon to augment traction with the sliced portion, means for rotating the roller to move said opposed peripheries of the ribs in the direction reached by the conveyor means surface, a cutting block having a surface disposed adjacently to the conveyor means surface for traversal by the issuing compressed portion of the material, narrow knife receiving slots formed in the cutting block face lengthwise of the reach of the conveyor means surface, a bank of circular axially-spaced knives rotatable about an axis transversely of the reach of the conveyor means surface, said knives being meshed with the compressor roller and having their cutting edges serrated with a portion thereof projecting into the cutting block slots, means for rotating the bank of knives to use their cooperation with the cutting block in cutting the sliced and compressed material into strips as it issues from between the roller and the conveyor means, a stripper bar having fingers projecting between the knives in said bank to deflect the strips from between the knives and thereby assure issuance of the strips endwise from said knife bank and the cutting block, a knife assembly comprising a blade carrier rotatable about an axis transversely of the conveyor means surface reach, and blades on and by said carrier, when it rotates, successively enter into the issuing strips to cut them into particles.

In a sectionalizing cutting machine, a chamber receivable of cuttable material, said chamber having a circular side wall wherein there is an opening which is narrow circumferentially of the wall, a rotatable knife having a circular cutting edge arranged generally tangentially to said chamber side wall and disposed with a portion of such cutting edge projected partially across said opening, impeller means rotatable in the chamber to propel cuttable material therein about said wall and against the knife cutting edge, said knife being operable to sever a slice from the material propelled thereagainst and to facilitate issuance of the slice through said opening generally tangentially of the chamber side wall, means for rotating the knife to expedite such slicing of the material, a conveyor belt disposed for receiving the sliced material issued from said opening, a cutting block having a face extending transversely of the belt flight and substantially flush therewith to receive the sliced material from the belt flight, narrow knife receiving slots formed in said cutting block face lengthwise of the belt flight, a bank of circular

axially-spaced knives rotatable about an axis transversely of the belt flight, said knives having portions of their cutting edges projecting into respective of the cutting block slots, means for rotating the bank of knives to cause their cooperation with the cutting block in cutting the sliced material into strips as it issues from the belt flight, and a stripper bar having fingers projecting between the knives in said bank to deflect the strips from between the knives and thereby cooperate with such knives and the cutting block in issuing the strips endwise from such knives.

4. In a sectionalizing cutting machine, a chamber receivable of cuttable material, said chamber having a circular side wall wherein there is an opening which is narrow circumferentially of the wall and has a radially outer edge at an approach side thereof and a radially inner edge at the opposite side thereof, a rotatable disc knife arranged generally tangentially to said circular wall of the chamber and disposed with a segmental portion protruding beyond said radially inner edge to place the cutting edge of the segmental portion radially inwardly of the chamber from the approach side of said opening, impeller means rotatable in the chamber to propel cuttable material therein about the circular wall in the direction to approach said opening from its approach side just prior to traversing the same, said knife being operable to slice a portion from the material as it traverses said opening and to facilitate issuance of the sliced portion from the chamber through said opening, means for rotating the knife to expedite such slicing of the material, conveyor means having a surface disposed for receiving the sliced portion issuing from said chamber and reaching from said opening to transfer the sliced portion therefrom, a cutting block having a surface disposed adjacently to the conveyor means surface for traversal by the sliced material issuing therefrom, narrow knife receiving slots formed in the cutting block face lengthwise of the reach of the conveyor means surface, a bank of circular axially-spaced knives rotatable about an axis transversely of the reach of the conveyor means surface, said knives having their cutting edges serrated with a portion thereof projecting into the cutting block slots, means for rotating the bank of knives to cause their cooperation with the cutting block in cutting the sliced material into strips as it issues from the conveyor means surface, and a stripper bar having fingers projecting between the knives in said bank to deflect the strips from between the knives and thereby assure issuance of the strips endwise from between said knife bank and the cutting block.

5. In a sectionalizing cutting machine, a chamber receivable of cuttable material, said chamber having a circular side wall wherein there is an opening which is narrow circumferentially of the wall and has a radially outer edge at an approach side thereof and a radially inner edge at the opposite side thereof, a rotatable disc knife arranged generally tangentially to said circular wall of the chamber and disposed with a segmental portion protruding beyond said radially inner edge to place the cutting edge of the segmental portion radially inwardly of the chamber from the approach side of said opening, impeller means rotatable in the chamber to propel cuttable material therein about the circular wall in the direction to approach said open-

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ing from its approach side just prior to traversing the same, said knife being operable to slice a portion from the material as it traverses said opening and incur discharge of the sliced portion generally tangentially from the chamber side wall through said opening, and means for rotating the knife to expedite such slicing of the material.

6. In a sectionalizing cutting machine, a chamber for cuttable material, said chamber having a circular side wall with a horizontal axis and an opening in the bottom of said side wall, a section of said wall adjacent to and carrying an approach edge of said opening constituting an approach wall section and being disposed outwardly radially with respect to the opposite edge of said opening, a rotatable disc knife arranged generally horizontally and disposed with a segmental portion thereof projecting contiguously to and past said opposite edge to place the cutting edge of such segmental portion radially inwardly of the chamber from the approach edge of the opening, means in the chamber for propelling the cuttable material about said side wall in the direction to cross said opening in approaching said knife, said knife being operable to slice a portion from the material as it traverses the opening and incur discharge of the sliced portion outwardly through said opening, means for rotating the knife to expedite such slicing of the material, conveyor means disposed beneath said knife for receiving the sliced portion, and means for operating the conveyor means to convey the received sliced portion from said opening in a direction generally diametrically of said knife.

7. In a sectionalizing cutting machine, conveyor means having a surface for the support of cuttable material lying thereon and having a median along which the material is conveyed thereby, a cutting block having a face extending transversely of said median and disposed to receive the material thereon as such material issues from the conveyor means, said face facing in the same direction as said conveyor means surface, a bank of axially spaced knives rotatable about an axis transversely of said median and in opposed parallelism with the cutting block face to place portions of their edges of said knives contiguously with said face, said knife edges and marginal side portions contiguous therewith being serrated, and means for rotating said knives in the direction to move said edge portions in the direction of issue of the material from the conveyor means to cause cooperation of the knives with the cutting block in progressing the material across its face and cutting the material into strips as it is so progressed.

8. In a sectionalizing cutting machine, conveyor means having a surface for the support of cuttable material lying thereon and having a median along which the material is conveyed thereby, a cutting block having a face extending transversely of said median and disposed to receive the material flatwise thereon as such material issues from the conveyor means, said face facing in the same direction as said conveyor means surface, narrow knife-receiving slots formed in the cutting block face lengthwise of the median, a bank of axially-spaced knives rotatable about an axis transversely of said median, said knives being serrated at their edges and at the marginal side portions contiguous with said edges, said edges projecting into respective of the slots, and means for rotating said knives in the direction to move said edge portions in the direction of issue of the material from the conveyor means

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to cause cooperation of the knives with the cutting block in progressing the material across its face and cutting the material into strips as it is so progressed.

9. In a sectionalizing cutting machine, conveyor means having a surface for the support of cuttable material lying thereon and having a median along which the material is conveyed thereby, a circumferentially ribbed compressing roller assembly arranged transversely of said median and in proximate opposed relation with the conveyor means surface for cooperation therewith in compressing the material and feeding the same in the direction of conveyance by the conveyor means, a cutting block having a face extending transversely of said median and disposed to receive the compressed material issuing from between the conveyor means and the compressing roller, narrow knife receiving slots formed in the cutting block face lengthwise of the median, a bank of circular axially-spaced knives rotatable about an axis transversely of said median, said knives being meshed with the compressing roller ribs and having portions of their cutting edges projecting into respective of the cutting block slots, means for rotating the knives to cause their cooperation with the cutting block in cutting the compressed material into strips as it issues from between the compressing roller and the conveyor means, a stripper bar having fingers projecting between the knives to cooperate therewith in issuing the strips endwise from the knives, and a knife assembly comprising a blade carrier rotatable about an axis transversely of said conveyor means median, and blades on such carrier and carried thereby successively into the issuing strips to cut them into shorter particles.

10. In a sectionalizing cutting machine, conveyor means having a surface for the support of cuttable material lying thereon and having a median along which the material is conveyed thereby, a circumferentially ribbed compressing roller assembly arranged transversely of said median and in proximate opposed relation with the conveyor means surface for cooperation therewith in compressing the material and feeding the same in the direction of conveyance by the conveyor means, a cutting block having a substantially flat face extending in substantial parallelism with the conveyor means surface and flush therewith for receiving the compressed material issuing from between the conveyor means and the compressing roller while guiding such material in an essentially straight path, narrow knife receiving slots formed in the cutting block face lengthwise of the median, a bank of circular axially-spaced knives rotatable about an axis transversely of said median, said knives being meshed with the compressing roller ribs and having portions of their cutting edges projecting into respective of the cutting block slots, and means for rotating the knives to cause their cooperation with the cutting block in cutting the compressed material into strips as it issues from between the compressing roller and the conveyor means.

11. In a sectionalizing machine, conveyor means having a surface for the support of cuttable material lying thereon and having a median along which the material is conveyed thereby, a circumferentially ribbed compressing roller assembly arranged transversely of said median and with the circumferential peripheries of said ribs in opposed spaced relation with the conveyor means surface for cooperation therewith in com-

pressing the material and issuing the same therebetween, the peripheries of said ribs having circumferentially spaced apices thereon to augment traction of the roller assembly with the material, means for rotating the roller assembly to move the opposed portions of said rib peripheries in the direction of movement of the material by the conveyor means, a cutting block having a face extending transversely of said median and disposed to receive the compressed material issuing from between the conveyor means and the compressing roller, narrow knife receiving slots formed in the cutting block face lengthwise of the median, a bank of circular axially-spaced knives rotatable about an axis transversely of said median, said knives being meshed with the compressing roller ribs and having portions of their cutting edges projecting into respective of the cutting block slots, means for rotating the knives to cause their cooperation with the cutting block in cutting the compressed material into strips as it issues from between the compressing roller and the conveyor means, and stripper fingers projecting between the knives to cooperate therewith in issuing the strips endwise from the knives.

12. In a sectionalizing cutting machine, conveyor means having a surface for the support of cuttable material lying thereon and having a median along which the material is conveyed thereby, a circumferentially ribbed compressing roller assembly arranged transversely of said median and in proximate opposed relation with the conveyor means surface for cooperation therewith in compressing the material and feeding the same in the direction of conveyance by the conveyor means, a cutting block having a face extending transversely of said median and disposed to receive the compressed material issuing from between the conveyor means and the compressing roller, a bank of circular axially-spaced knives rotatable about an axis transversely of said median, said knives being meshed with the compressing roller ribs and having portions of their cutting edges projecting into close proximity with the cutting block, means for rotating the knives to cause their cooperation with the cutting block in cutting the compressed material into strips as it issues from between the compressing roller and the conveyor means, the edges of said knives being serrated to augment their tendency to draw the material into cutting position therebetween and the cutting block, and stripper fingers projecting between the knives to cooperate therewith in issuing the strips endwise from the knives.

13. In a sectionalizing cutting machine, conveyor means having a surface for the support of cuttable material lying thereon and having a median along which the material is conveyed thereby, a circumferentially ribbed compressing roller assembly arranged transversely of said median and with the circumferential peripheries of said ribs in opposed spaced relation with the conveyor means surface for cooperation therewith in compressing the material and issuing the same therebetween, the peripheries of said ribs having circumferentially spaced apices thereon to augment traction of the roller assembly with the material, means for rotating the roller assembly to move the opposed portions of said rib peripheries in the direction of movement of the material by the conveyor means, a cutting block having a face extending transversely of said median and disposed to receive the compressed material issuing from between the conveyor

means and the compressing roller, narrow knife receiving slots formed in the cutting block face lengthwise of the median, a bank of circular axially-spaced knives rotatable about an axis transversely of said median, said knives being meshed with the compressing roller ribs and having portions of their cutting edges projecting into respective of the cutting block slots, means for rotating the knives to cause their cooperation with the cutting block in cutting the compressed material into strips as it issues from between the compressing roller and the conveyor means, the edges of said knives being serrated to augment their tendency to draw the material into cutting position therebetween and the cutting block, and stripper fingers projecting between the knives to cooperate therewith in issuing the strips endwise from the knives.

14. In a sectionalizing cutting machine, conveyor means having a surface for the support of cuttable material lying thereon and having a median along which the material is conveyed thereby, a circumferentially ribbed compressing roller assembly arranged transversely of said median and with the circumferential peripheries of said ribs in opposed spaced relation with the conveyor means surface for cooperation therewith in compressing the material and issuing the same therebetween, means for rotating the roller assembly to move the opposed portions of said rib peripheries in the direction of movement of the material by the conveyor means, a cutting block having a substantially flat face constituting essentially a continuation of said conveyor means surface and thus disposed to receive the compressed material issuing from between the conveyor means and the compressing roller, a bank of circular axially-spaced knives rotatable about an axis transversely of said median, said knives being of less diameter than the compressing roller ribs and meshed therewith, and means for rotating the knives to cause their cooperation with the cutting block in cutting the compressed material into strips as it issues from between the compressing roller and the conveyor means.

15. In a sectionalizing cutting machine, a conveyor belt having a relatively straight feeding flight for the support and transfer of cuttable material lying thereon, means for operating the belt to move said flight endwise for conveying the material toward an end thereof, a circumferentially ribbed compressing roller assembly arranged transversely of the belt flight, the peripheries of the roller ribs being in opposed relation with the belt flight to cooperate therewith in feeding the material and configured to improve traction with the material, a cutting block having a substantially flat face in substantial parallelism with the belt flight at the end thereof and substantially flush therewith to receive the material fed from between the roller assembly and the belt flight, a bank of circular axially-spaced knives rotatable about an axis transversely of the belt flight, said knives being of less diameter than the roller assembly ribs and meshed therewith, and means for rotating said knives to cause their cooperation with the cutting block in cutting the material into strips following issuance from between the roller assembly and the belt flight.

16. In a sectionalizing cutting machine, a conveyor belt having a relatively straight feeding flight for the support and transfer of cuttable material lying thereon, means for operating the belt to move said flight endwise for conveying the ma-

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terial toward an end thereof, a circumferentially ribbed compressing roller assembly arranged transversely of the belt flight, the peripheries of the roller ribs being in opposed relation with the belt flight to cooperate therewith in feeding the material and configured to improve traction with the material, a cutting block having a face extending transversely of the belt flight at the end thereof and substantially flush therewith to receive the material fed from between the roller assembly and the belt flight, said face containing a plurality of laterally-spaced slots extending lengthwise of the belt flight, a bank of axially-spaced knives rotatable about an axis transversely of the belt flight, said knives being meshed with the compressing roller ribs and having portions of their cutting edges projecting into said slots, and means for rotating the knives to cause their cooperation with the cutting block in cutting the compressed material into strips as it is fed onto the cutting block face, and the edges of said knives being serrated for augmenting their tendency to draw the material across the cutting block face in the direction the material is fed thereonto.

17. In a sectionalizing cutting machine, a conveyor belt having a relatively straight feeding flight for the support and transfer of cuttable material lying thereon, means for operating the belt to move said flight endwise for conveying the material toward an end thereof, a cutting block having a face extending transversely of the belt flight at the end thereof and substantially flush therewith to receive the material as it is fed thereonto from the belt flight, said face facing in the same direction as said belt flight, said face containing a plurality of laterally-spaced slots extending lengthwise of the belt flight, a bank of axially-spaced knives rotatable about an axis transversely of the belt flight and arranged with portions of their cutting edges within said slots, and means for rotating the knives to cause their cooperation with the cutting block in cutting the material into strips as it is fed onto the cutting block face, and the edges of said knives being serrated for augmenting their tendency to draw the material across the cutting block face in the direction the material is fed thereonto.

18. In a sectionalizing cutting machine, con-

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veyor means having a surface for the support of cuttable material lying thereon and having a median along which the material is conveyed thereby, a circumferentially ribbed compressing roller assembly arranged transversely of said median and in proximate opposed relation with the conveyor means surface for cooperation therewith in compressing the material and feeding the same in the direction of conveyance by the conveyor means, a cutting block having a substantially flat face extending in substantial parallelism with the conveyor means surface and flush therewith for receiving the compressed material issuing from between the conveyor means and the compressing roller while guiding such material in an essentially straight path, narrow knife receiving slots formed in the cutting block face lengthwise of the median, a bank of circular axially-spaced knives rotatable about an axis transversely of said median and spaced less distantly perpendicularly from said cutting block face than the axis of the compressing roller structure is spaced from such face, said knives being meshed with the compressing roller ribs and having portions of their cutting edges projecting into respective of the cutting block slots, and means for rotating the knives to cause their cooperation with the cutting block in cutting the compressed material into strips as it issues from between the compressing roller and the conveyor means.

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