

"IMPROVEMENTS IN OR RELATING TO FRUIT OR VEGETABLE GRATERS
OR SHREDDERS"

1 The present invention relates to fruit or vegetable
graters or shredders comprising a substantially plane
support member and a plurality of cutter blades project-
ing therefrom said blades each being formed by cutter
5 sections that are respectively parallel to and perpendic-
ular to the support members the cutter section having a
cutting edge, and said cutter blades being arranged
obliquely across the longitudinal axis of said support
member in such manner that the cutting edges of the
10 parallel cutter sections form a cutting edge which appears
continuous as seen in the direction of relative movement
between the device and the fruit or vegetable being
grated or shredded, which is interrupted only by the
cutting edges of the perpendicular cutter sections.
15 Such utensils are used by holding in the hand and
pressing the fruit or vegetable along its length or
vice versa.

 This invention is a modification of and improvement
in a utensil construction described in my Austrian
20 Patent Specification No. 306942 with which it is possible
to cut fruits and vegetables, particularly potatoes,
into strips.

 It would also be desirable to cut up other fruits
and vegetables, primarily in the preparation of diets
25 based on uncooked food stuffs, because the comminuted
parts are then kept in loose intermingled form and do
not collapse into insignificant portions, for example
as in the case in which fruits are comminuted on a
conventional grater or rasp. It is impossible however
30 to produce particularly thin strips or shreds with a

1 known chip cutter.

In a known cutter, several cutters are incorporated which are bent into a Z-shape from a metal strip and each cutter is secured by rivets or the like to a
5 support plate and to a rear bearing plate arranged in raised position with respect to the former; the cutters may also have their extremities individually inset into the support plate. The thinner the strips required, the greater should be the number of incorporated cutters
10 and the closer should these be set. This obviously requires considerable time in manufacturing, since each separate cutter must first be placed in its position and then fastened. Above all however, it is hardly possible to prevent skewing and differences in height
15 in case of closely set cutters, which during subsequent use of the utensil lead to skewing of the fruit and to an untidy cutting surface, even if special care is applied.

It is an object of the invention to provide a grater or shredder of the kind hereinabove referred to but
20 to modify it in such manner that it is also possible to use it to produce such thin strips as are desirable in the preparation of uncooked diets, in particular uncooked diet salads. To this end, the grater or shredder should have a comparatively simple structure, be cheap
25 to produce and easy to clean. Above all however, it should be usable under application of little force and should grate or shred the material tidily.

Accordingly the invention consists in a fruit or vegetable grater or shredder comprising a substantially
30 plane support member and a plurality of cutter blades

- 1 projecting therefrom, said blades each being formed by
cutting sections that are respectively parallel to and
perpendicular to the support member each cutter section
having a cutting edge and said cutter blades being
5 arranged obliquely across the longitudinal axis of
said support member in such manner that the cutting
edges of the parallel cutter sections form a cutting
edge which appears continuous as seen in the direction
of relative movement between the device and the fruit
10 or vegetable being grated or shredded, which is
interrupted only by the cutting edges of the perpend-
icular cutter sections, wherein the cutter blades are
formed integrally with a central cutter blade holder,
the perpendicular cutter sections projecting from a
15 base plate situated in the plane of the support member
and the parallel cutter sections projecting from a
cover plate which extends parallel to the support member,
the base plate, cover plate and cutter blades all forming
part of the cutter blade holder.
- 20 With this construction, the pattern of the cutters
of the one piece cutter holder is permanently determined
at manufacture. At this stage, it is possible to establish
as close a setting as desired of the cutters as well as
a perfect alignment of the same without complication,
25 by means of conventional moulding techniques. The
construction according to the invention may be embodied
not only by inseting a one-piece cutter blade holder
comprising a base plate into a support member but
alternatively, by suitable selection of identical
30 materials for the cutter holder and the support member

1 it is possible to produce these parts initially in
joined form, so that they merge into each other
without joins. A useful side effect of the production
of such a grater or shredder lies in the inhibition
5 or even elimination of a risk of injury. Until now,
the insertion and fastening of the individual cutters
in known chip cutters had implied a particular risk of
injury which was the greater, the risks increasing with
the number of cutters which had to be incorporated.

10 The construction is simple, is inexpensive to
produce and easy to clean. It renders it possible to
divide fruits and vegetables into thin strips without
application of great force, an even cut surface re-
maining in the fruit which is to be comminuted. Such
15 a remaining cut surface enables perfectly formed strips
to be produced during subsequent cutting operations,
but also and beyond this in the case of larger fruit in
particular, these may be packaged again neatly and stored
if applicable, so that the residual processing may be
20 effortlessly at a later time.

If desired, the central cutter blade holder may be
provided with additional cutters at its trailing edges
and in continuation of the cover plate, and a further
base plate.

25 This latter construction enables the devices to
have two working directions which are mutually opposed
whereby the fruit or vegetable can be reciprocated along
the device to provide a cut in each direction, which has
not been possible with prior constructions. In the case
30 of a conventional chip cutter, this action could not

1 be incorporated because the individual cutters thereof
lack a comparable stability and constancy of form.

If desired, it is possible to enable the cutters
to be made from plastics materials, the blades or
5 cutter elements consisting of plastics material and
the cutting edges being formed by chamfers on the
inner side of the parallel and perpendicular cutter
sections. Production is thereby rendered particularly
economical and leaves the way open to mass-production.

10 The cutting edges of the perpendicular cutter
sections advantageously extend approximately perpendic-
ularly to the support members, and the cutting edges of
the parallel cutter sections approximately at right
angles to the direction of operation. This leads to
15 simultaneous incision into the fruit or vegetable from
above and from the side within the same cutter, which
facilitates rectilinear traversal and militates against
deflection. The strip cut off may nevertheless be
pushed away downwards and sideways. By contrast, a
20 pulling cut is performed from one cutter to another,
i.e. the individual cutters engage successively in the
fruit, so that the application of force required to
divide the fruit remains comparatively small.

In order that the invention may be more clearly
25 understood, reference will now be made to the accompany-
ing drawings which show one embodiment thereof by way
of example and in which:-

Figure 1 shows a grater or shredder which can
perform cuts in two directions in plan view,
30 Figure 2 shows a portion of the device according

1 to Figure 1, to an enlarged scale,

Figure 3 shows an axial section through the device along the line III-III of Fig. 2;

5 Figure 4 shows the detail IV of Figure 3 to an enlarged scale,

Figure 5 shows an end view of the device, and

Figure 6 shows a view of a portion of the device along the line VI-VI of Figure 5, i.e. partially in plan view and partially in horizontal cross-section.

10 Referring now to the drawings, according to Figures 1 and 2, the fruit or vegetable grater or shredder shown comprises a support member 1 having lateral delimiting webs 2 and a central cutter blade holder 3. The cutter holder 3 comprises a base plate 4,
15 a plurality of cutter blades 5 and a cover plate 6 which has its trailing edge continued by complementary cutters 5a and by another base plate 4a. Holding the device stationary with its foot resting on a firm surface, the cutters 5 divide the fruit or vegetable
20 into small strips in layers, when the fruit or vegetable is moved in the direction of the arrow 7 along the device. However the cutter blades 5a are brought into action during a movement in the opposite direction i.e. in the direction of the arrow 7a. The embodiment shown
25 thus has two directions of operation. Although not apparent in the plan view, a wide gap through which the comminuted fruit may drop downwards is situated in the support member 1 beneath the cover plate 6. If desired of course, the device may be moved over the
30 surface of the fruit or vegetable but generally, this

1 is not so convenient.

Each of the cutter blades 5, 5a comprise a cutter section 8 parallel to the support member having a cutting edge 9, and a cutter section 10 perpendicular to the support member and having a cutting edge 11. The entire cutter blade holder 3 is constructed in one piece and in this case consists of plastics material, but it may be made from thin-gauge metal sheet. The cutting edges 9 are formed by chamfers or obliquities 12 on the inner side of the parallel cutter sections 8 (see Figures 3, 4 and 5). and the cutting edges 11 by chamfers or obliquities 13 on the inner side of the perpendicular cutter sections 10 (see Figures 5 and 6).

As will be apparent in particular from Figures 3, 4 and 5, the support member 1 is substantially plane, and the base plates 4, 4a extend in the plane of the support member 1, whereas the cover plate 6 extends parallel thereto. The parallel cutter sections 8 project from the cover plate 6 and the perpendicular cutter sections 10 from the base plate 4.

By virtue of selection of identical material for the cutter blade holder 3 and the rest of the grater or shredder, the base plates 4, 4a merge without joins into the support member 1 and form an integral unit therewith in the embodiment shown.

It will also be apparent from Figure 5, that the cutting edges 9 of the parallel cutter sections 8, as seen in the working direction, conjointly form a continuous cutting edge which is interrupted only by the cutting edges 11 of the perpendicular cutter sections 10.



-8-

C L A I M S

- 1 1. A fruit or vegetable grater or shredder comprising
a substantially plane support member and a plurality
of cutter blades projecting therefrom, said blades
each being formed by cutting sections that are
5 respectively parallel to and perpendicular to the
support member each cutter section having a cutting
edge and said cutter blades being arranged obliquely
across the longitudinal axis of said support member in
such manner that the cutting edges of the parallel cutter
10 sections form a cutting edge which appears continuous
as seen in the direction of relative movement between
the device and the fruit or vegetable being grated or
shredded, which is interrupted only by the cutting
edges of the perpendicular cutter sections, wherein the
15 cutter blades are formed integrally with a central
cutter blade holder, the perpendicular cutter sections
projecting from a base plate situated in the plane of the
support member and the parallel cutter sections projecting
from a cover plate which extends parallel to the
20 support member, the base plate, cover plate and cutter
blades all forming part of the cutter blade holder.
2. A grater or shredder as claimed in claim 1, wherein
the central cutter element is provided with additional
cutters at its trailing edge in continuation of the
25 cover plate and a further base plate.
3. A grater or shredder as claimed in claim 1 or 2,
wherein the central cutter blade holder is made from
thin-gauge metal sheet.
4. A grater or shredder according to claim 1 or 2,
30 wherein the central cutter blade holder is made from



- 1 plastics material and the cutting edges are formed by
chamfers at the inner side of the parallel and
perpendicular cutter sections.
5. A grater or shredder as claimed in claim 4, wherein
- 5 the cutting edges of the perpendicular cutter sections
extend substantially perpendicularly to the support
member and the cutting edges of the parallel cutter
sections extend approximately at right angles to the
direction of relative movement between the device and
- 10 the fruit or vegetable being grated or shredded.
6. A fruit or vegetable grater or shredder, substan-
tially as hereinbefore described with reference to the
accompanying drawings.

The text of the specification has been reproduced by photocopying the applicants original typescript. It may contain a few amendments which are difficult to read. The original typescript containing these amendments may be inspected on the premises of the Patent Office