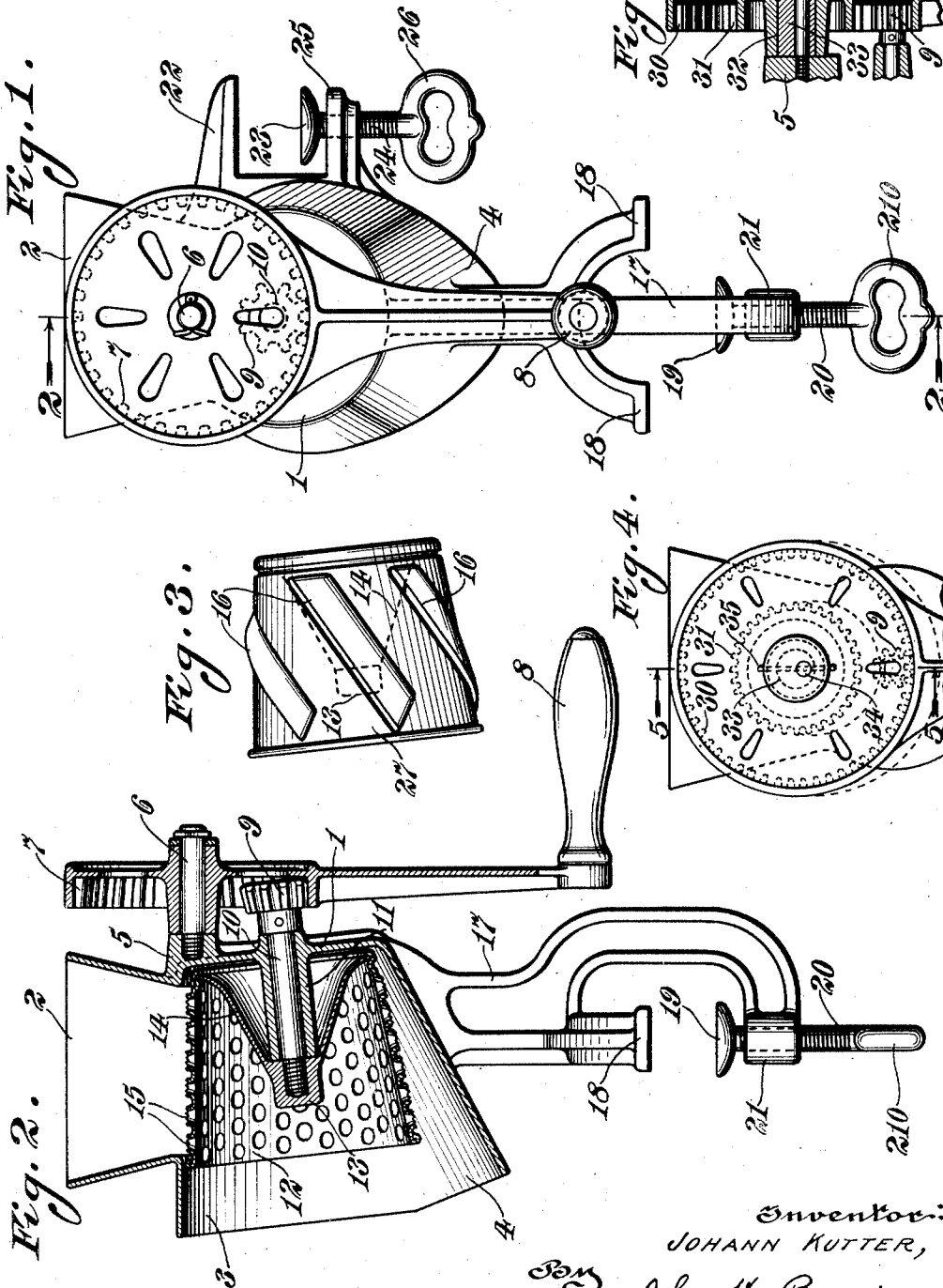


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VEGETABLE GRATER AND SLICER.
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1,372,239.

Patented Mar. 22, 1921.



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UNITED STATES PATENT OFFICE.

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VEGETABLE GRATER AND SLICER.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JOHANN KUTTER, a citizen of Germany, and residing at Nuremberg, Bavaria, Germany, have invented a certain new and useful Improvement in Vegetable Graters and Slicers, of which the following is a specification.

This invention relates to culinary implements and more particularly to machines for grinding and slicing vegetables.

One of the objects of this invention is to provide a machine which is so constructed as to permit ready removal and replacement of the drum or element by so supporting the same, so as to avoid tipping of the element and binding of the same during its rotation.

Further objects will appear from the detail description taken in connection with the accompanying drawing, in which:

Figure 1 is an end elevation of a machine embodying this invention;

Fig. 2 is a section on the line 2—2, Fig. 1;

Fig. 3 is a detail of the drum showing another embodiment of this invention;

Fig. 4 is an end view showing an arrangement for obtaining different drum speeds; and

Fig. 5 is a section on line 5—5, Fig. 4.

Referring now to the accompanying drawing, 1 designates a housing which may be formed either by casting or even of sheet metal and which is provided with a hopper 2, and an outlet 3 having an inclined portion 4. This housing has a boss 5 on which is mounted a stub-shaft 6 which supports an internal gear 7, provided with a handle 8. The gear meshes with a pinion 9 on a shaft 10 which is mounted on a bearing 11 formed on the housing, and projects for some distance therein.

Mounted in the housing is a drum or element 12 which has a boss 13 on the end of a spider 14 engaging the right end of the drum, the connection being formed by beading the sheet metal of the drum over the edge of the supporting part 14. The boss 13 is internally threaded to engage a correspondingly threaded part on the end of the shaft 10. The drum may be provided either with a struck up tooth portion 15 to provide a grater, or may be provided with cutters 16, Fig. 3, to form slicing elements.

The housing is provided with a bracket 17 having spaced feet 18, and a cooperating clamping jaw 19 on the end of a screw 20

threaded into a boss 21 on the bracket and provided with a thumb nut 210. In this way, the device may be clamped on a table so as to extend thereover. The housing may be further provided with another jaw 22 having cooperating therewith a movable jaw 23 on the end of a screw 24 threaded into a lug 25 on the housing, and provided with a thumb nut 26 whereby the device may be clamped to extend along the side of a table.

In operation the device is clamped on a suitable support and if, for instance, the grating element or drum is used, the material to be grated is fed into the hopper and pressed against the drum, while the latter is rotated by revolving the handle 8. In this way, the material can be effectively grated, and as it passes through the drum it will discharge through its end, while any grated material carried on the outer surface of the drum will be dropped and all the grating material will pass out of the housing through the inclined part 4. When it is desired to slice vegetables, the grating drum, Fig. 2, is replaced by a slicing drum 27, Fig. 3. This can be accomplished by grasping the drum and turning it to the left, while the handle 8 is retained; the slicing drum can then be screwed on to the end of the shaft 10 and it is then ready for slicing.

It will be noted that the drum is supported at approximately its center by the projecting bearing 11 and the projecting part 14 on the drum, both of which meet at approximately the center of the drum. Accordingly, not only is the drum rigidly supported, as the pressure on the bearing is practically uniform, but the tipping moment is reduced to a minimum, since the force applied to the drum will cause the tipping moments to practically neutralize one another; accordingly, the drum is securely supported.

As it may be desirable in operating on different kinds of vegetables to drive the drum 12 at different speeds, the arrangements shown in Figs. 4 and 5 have been provided. In this embodiment, two gears of different diameters are provided for driving the pinion 9. These are arranged on the same hub, one being an internal gear 30 and the other an external gear 31. The hub of these gears has a central bore adapted to turn on a bearing pin 33. The pin 33 is mounted upon a stud 34 which

passes eccentrically through the pin 33 and is screwed into the boss 5. The stud 34 is rigidly mounted in the boss 5 and the pin 33 is fixed in either of two positions in relation thereto by means of a key 35. When the pin 33 is fixed in the position shown in Figs. 4 and 5, the gear 30 will be thrown into mesh with the pinion 9. By removing the key 35 and turning the pin 33 through 180° and reinserting the key 35, the center of rotation of the gears 30 and 31 will be lowered to a point so that the gear 31 will be thrown into mesh with the pinion 9. In this way, either of two speeds of the drum 12 may be obtained.

It is obvious that various changes may be made in the details of construction without departing from the spirit of this invention; it is, therefore, to be understood that this invention is not to be limited to the specific details shown and described.

Having thus described the invention, what is claimed is:

1. A device of the character described, comprising, a housing, a drum therein, a spider adapted to support said drum and extending thereinto, a bearing on said housing and extending into said spider, and means for operating said drum.

2. A device of the character described, comprising, a housing, a drum therein adapted for operating on culinary materials, an opening in said housing for the introduction of the materials, a bearing for said drum extending opposite said opening, and means for operating said drum.

3. A device of the character described, comprising, a housing, a drum therein, a spider extending into said drum and supporting the same at one end, and a bearing on said housing extending into said drum.

4. A device of the character described, comprising, a housing, a drum therein, a bearing on one end of said housing and ex-

tending into said drum, and a spider on one end of said drum and extending along said bearing.

5. A device of the character described, comprising, a housing, a drum therein, a bearing on one end of said housing and extending into said drum, a shaft in said bearing, and a spider on one end of said drum, extending along said bearing and mounted on said shaft.

6. A device of the character described, comprising, a housing, a drum therein, a bearing on one end of said housing and extending into said drum, a shaft in said bearing, and a spider on one end of said drum, extending along said bearing and detachably mounted on said shaft.

7. A device of the character described, comprising, a housing having a hopper and open at one end, a drum in said housing and open at one end, a spider closing the other end of said drum and extending therein, and a bearing on the other end of said housing and extending therein.

8. A device of the character described, comprising, a housing having a hopper and open at one end, a drum in said housing and open at one end, a conical spider closing the other end of said drum and extending therein, and a bearing on the other end of said housing and extending therein.

9. A device of the character described, comprising, a housing having a hopper and open at one end, a drum in said housing and open at one end, a spider closing the other end of said drum and extending therein, a bearing on the other end of said housing and extending therein, and a shaft mounted in said bearing and connected at its end to said spider.

In testimony whereof I affix my signature this 9th day of November, 1920.

JOHANN KUTTER.