

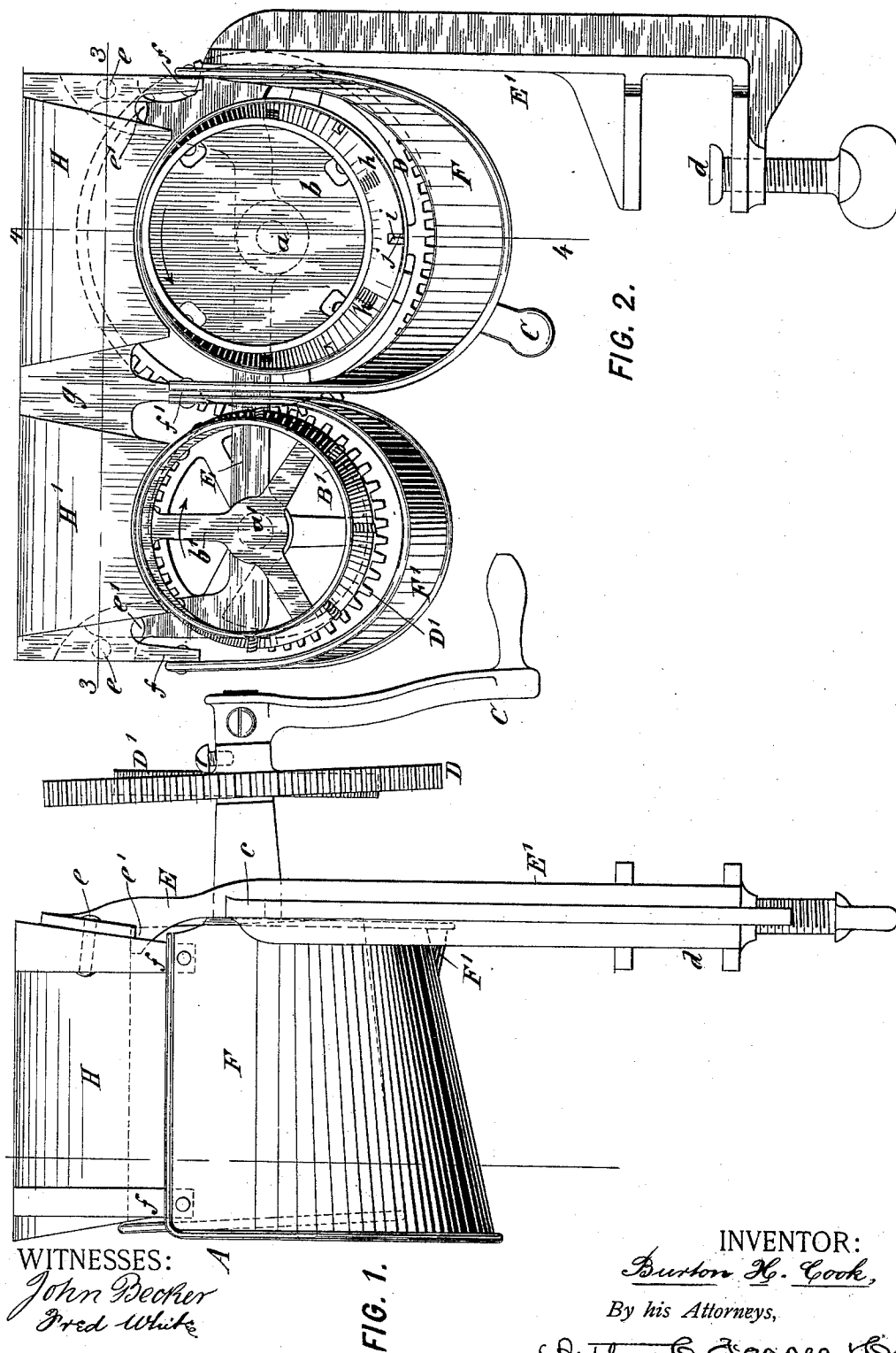
(No Model.)

2 Sheets—Sheet 1.

B. H. COOK.
CULINARY GRATER AND SLICER.

No. 469,354.

Patented Feb. 23, 1892.



WITNESSES:
John Becker
Fred White

FIG. 1.

INVENTOR:
Burton H. Cook,
By his Attorneys,
Arthur C. Brasen & Co.

B. H. COOK.
CULINARY GRATER AND SLICER.

No. 469,354.

Patented Feb. 23, 1892.

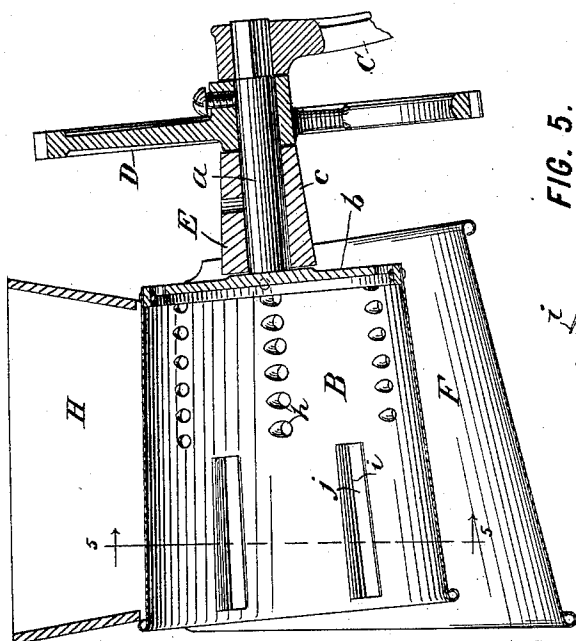


FIG. 4.

FIG. 5.

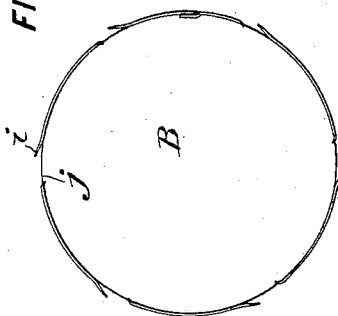
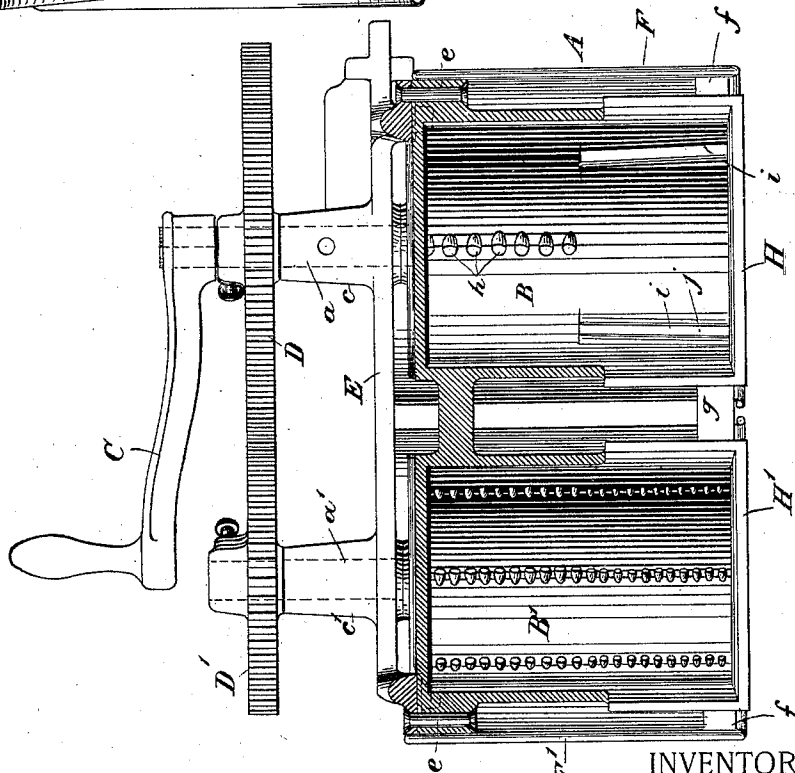


FIG. 3.



WITNESSES:

John Recker
Fred White

INVENTOR:

Burton H. Cook,

By his Attorneys,

Arthur C. Fraser & Co.

UNITED STATES PATENT OFFICE.

BURTON H. COOK, OF BROOKLYN, NEW YORK.

CULINARY GRATER AND SLICER.

SPECIFICATION forming part of Letters Patent No. 469,354, dated February 23, 1892.

Application filed August 29, 1891. Serial No. 404,061. (No model.)

To all whom it may concern:

Be it known that I, BURTON H. COOK, a citizen of the United States, residing in Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Culinary Graters and Slicers, of which the following is a specification.

This invention relates to kitchen implements for grating or slicing. It provides an improved implement by means of which vegetable or other substances may be ground or grated to different degrees of fineness or may be sliced. The implement is of that class employing a rotary cylinder or cylinders as the grating or slicing device, with a crank for turning the cylinder or cylinders. In the case of two cylinders the crank is applied to one and the other is geared thereto.

My present invention is in part an improvement upon the construction of culinary grater claimed in my patent, No. 448,794, dated March 24, 1891. In that grater the rotary grating-cylinders are mounted in a sheet-metal casing divided by a partition into two compartments formed with inclined bottoms or chutes conducting the grated material through the respective cylinders out at opposite ends of the casing.

My present invention provides a casing made up in part of cast metal and in part of sheet metal and provides an improved means for mounting the axial shafts of the grating-cylinders.

My invention is also in part an improvement in the construction of culinary slicers. Such slicers have heretofore been constructed with one or more slicing blades or knives inserted in a stationary or movable part, so that their cutting-edges should be moved against the material to be sliced. Thus a rotary slicing-cylinder has been constructed formed with longitudinal slots and having slicing-knives set in or adjacent to the slots, so that the slice is cut by the knives and passed through the slots into the interior of the cylinder, whence they are delivered at the end thereof. Such constructions involve considerable expense; and the object of my invention is to provide a construction equally suitable for

the purpose which can be manufactured and sold much more cheaply than those involving separate knife-blades. To this end I construct the slicing-cylinder of sheet metal, preferably tinned iron, and I form the slots and cutting-blades by making incisions in the sheet metal and bending it outwardly to a sufficient extent. Thus the slots and slicing-blades are formed both by a single cutting or stamping operation. The turned-up edges may be subsequently sharpened or may be left sufficiently sharp for culinary purposes by the action of the stamping-dies. A slicing-cylinder thus constructed is not only much cheaper than any heretofore made, but has the further advantage that it is very easily cleaned, having no recesses or inaccessible portions in which organic matter may lodge. The cylinder is constructed to be accessible both interiorly and exteriorly for cleaning.

Figure 1 of the accompanying drawings is a side elevation of the preferred construction of my improved utensil. Fig. 2 is an end or rear elevation thereof. Fig. 3 is a plan partly in horizontal section. Fig. 4 is a vertical mid-section through the slicing-cylinder, cut on the line 4 4 in Fig. 2. Fig. 5 is a transverse section through the slicing-cylinder on the line 5 5 in Fig. 4.

Let A designate, in general, the frame or casing including all the stationary portions of the utensil.

Let B and B' represent the respective grating-cylinders, C the crank connected to the spindle of one of the cylinders, and D D' gears for communicating motion therefrom to the other cylinder.

The cylinders B B' consist of sheet metal bent into tubular form and made slightly conical. They are arranged, as in my said former patent, with the larger end of one cone turned in one direction and the larger end of the other turned in the opposite direction, the upper sides of the two cones being arranged approximately horizontal, while their lower sides are pitched sufficiently to take the grated or sliced material out at the ends of the cones or cylinders. The smaller end of the cylinder B is closed or partly

closed by a disk b , while the larger or delivery end of the cylinder B' is in similar manner provided with a disk b' , having openings through it sufficient to discharge the ground or grated material. The disks $b b'$ are provided with flanges, through which rivets are passed to securely fasten the ends of the respective grating-cylinders to them. The disks $b b'$ are mounted upon the ends of axial shafts $a a'$, respectively. This may conveniently be accomplished by forming the shafts and disks integrally. The shafts are arranged to turn in bearings $c c'$, formed on a supporting-frame E , which extends across the front of the machine and is formed at one end with a downwardly-extending standard E' , provided with a clamp or other fastening device d , by which it may be attached to a table or other support. All the parts of the apparatus are thus mounted upon and supported by the frame $E E'$.

The stationary casing of the grater consists of a pair of hoppers $H H'$, arranged over the respective cylinders, and a pair of sheet metal chutes $F F'$, hung beneath the respective cylinders. The hoppers $H H'$ are formed of cast metal and preferably both in one piece. They are curved at their bottom to closely conform to the grating-cylinders without touching them, and they thence flare upwardly toward their tops, which are open.

The hopper-casting is supported from the frame E either by being cast integrally therewith or preferably by being made as a separate casting and fastened thereto by rivets $e e$, as shown best in Fig. 3, or by screws or other equivalent fastenings. The frame E is formed near its opposite ends with projections $e' e'$, which pass beneath the projections at the ends of the hopper-casting, which are engaged by the rivets. These projections e' serve to insure the uniting of the two parts in correct relative positions and also strengthen their engagement. By this construction the portion of the casing comprising the hoppers is made strong and rigid, and, having no joints or seams, as would be the case if made of sheet metal, as formerly, it is easily kept clean.

The chutes $F F'$ consist of hoods or aprons of sheet metal formed with inclined bottoms, that for the cylinder B pitching toward the rear, while that for the cylinder B' pitches toward the front or crank side of the machine. The chutes consequently pitch in the same direction as the lower sides of the grating-cylinders, in order to deliver the grated or sliced material falling through these cylinders at the same side of the machine as the delivery ends of the respective cylinders. The chutes are fastened to and hung from the hopper-casting $H H'$, being attached thereto, preferably, by riveting. In order to facilitate this attachment, I form the hopper-casting with downwardly-projecting arms $f f$ at its opposite ends and $f' f'$ at its middle.

These arms project downwardly sufficiently far to render their end portions accessible for riveting. The upper edges of each chute are fastened to one side by riveting to the two arms $f f$ at one end of the hopper-casting and at the other side by riveting to the arms $f' f'$ at the middle of the hopper-casting. The rivets passing through these middle arms $f' f'$ engage the upper side portions of both the chutes. For convenience in casting, as well as to facilitate riveting, the arms f are formed on projecting ribs extending a certain distance out from the ends of the hopper-casting. The arms f' are formed as downward prolongations from two connecting ribs or projections $g g$, by which the two hoppers $H H'$ are joined together. This improved construction for connecting the chutes to the hoppers enables the machine to be very cheaply manufactured, while the chutes are united in strong and permanent manner and with the fewest possible fastenings.

The cylinder B' is solely a grating-cylinder, being formed with perforations having their edges suitably pressed up or indented to serve as grating-surfaces. Its graters are preferably of two different degrees of fineness, the finer of the two toward one end and the coarser toward the other end of the cylinder, so that by holding the object to be grated at one end of the hopper it will be finely and by holding it at the other end it will be comparatively coarsely grated. The cylinder B is both a grating and a slicing cylinder. From the middle to one end it is formed with grating-perforations $h h$, which are preferably very coarse, so that this portion of the cylinder may be used for coarsely grating or chopping. The other end portion of the cylinder constitutes a slicer, being formed with slicing-blades $i i$ and slots $j j$, through which the slices may pass. The slicing-blades, instead of being separate knife-blades attached to the cylinder, as heretofore, are formed integrally with the cylinder by stamping or striking up the edge of the sheet metal thereof at a suitable angle and causing its edge to project to a suitable extent beyond the periphery of the cylinder. The slots j are cut out in a stamping-press, and either at the same time or at a subsequent operation the blades i are pressed up at an angle, as shown best in Fig. 5. These operations are best performed on flat sheet metal, which is subsequently bent into cylindrical or slightly-conical form, its edges being overlapped and joined together to form the complete cylinder. If necessary, the cutting-edges of the blades may be sharpened. This construction has the advantage, as compared with the attachment of separate blades to a cylinder, first, of its great cheapness; second, of greater simplicity, there being no fastening devices, and, third, of being much more easily kept clean, since there are no spaces or interstices into which organic matter can find its way, all the surfaces being easily accessi-

ble from the interior or exterior of the cylinder, so that they may be thoroughly cleaned with the least possible trouble. The angle of upward projection of the blades *i i* being invariable, they would under like conditions cut slices of uniform thickness. It is, however, desirable at times to cut slices of different thicknesses. To provide for this, I construct the slots *j j* of a width greater than the upward projection of the cutting-edges beyond the periphery of the cylinder, being preferably several times greater. By means of these wide slots the material being sliced is unsupported for a considerable distance in advance of the cutting-edge. It results from this that the operator may regulate the thickness of the slices to be cut by pressing the material more or less firmly against the cylinder. To cut thin slices, he will press it but slightly against the cylinder, while to cut thicker slices he would increase the pressure and thereby force the material to a greater extent down through the slots before the cutting-edges act upon it.

One advantage of my invention as compared with the construction shown in my said former patent is that the shafts *a a'* of the grating-cylinders are arranged entirely at one end of the cylinders and do not project within them, whereas in my former patent the shafts passed entirely through the cylinders and had bearings in the casing at the opposite ends thereof, so that the shafts within the cylinders and the last-mentioned bearings formed obstructions, rendering it difficult to discharge the sliced or grated material and to gain access to the cylinders for cleaning. By my present invention the entire interior of both the cylinders is open and accessible from the rear side of the machine, so that grated material can be easily discharged and they may be very easily cleaned. The entire interior of the chutes *F F'* is also open and accessible from the rear side of the machine, so that they also may be readily cleaned.

It will be understood that my invention is applicable to only a single grating or slicing cylinder—that is to say, the cylinder *B* and its hopper *H'* and chute *F'* and gearing *D D'* may be omitted. The remaining parts will then constitute a single grater or slicer, according as the cylinder *B* is formed with a grating-surface or with slicing-blades, or, as shown, it may be both a slicer and a grater by being formed at one end with slicing-blades and at the other end with grating-surfaces.

My invention may be otherwise modified in many ways. For example, other means of supporting the stationary parts of the apparatus may be provided in lieu of the standard *E'* and its clamp.

I claim as my invention the following defined novel features, substantially as hereinbefore specified, namely:

1. In a culinary utensil, the combination of

a grating or cutting cylinder, a hopper mounted over said cylinder and formed of cast metal, with downwardly-projecting arms at its opposite sides and ends, and a sheet-metal chute extending beneath the cylinder and having its opposite sides fastened at their upper edges by riveting to said arms.

2. In a culinary utensil, the combination of a supporting-standard *E'*, formed integrally with a horizontal supporting-frame *E*, formed with bearing-bosses *a a'* and having upturned arms at its ends, a pair of cast-metal hoppers *H H'*, having projections at their ends meeting the ends of said arms and fastened thereto by rivets or screws, and a pair of grating or cutting cylinders mounted beneath said hoppers on axial shafts turning in said bearing-bosses.

3. In a culinary utensil, the combination of a standard *E'* and horizontal frame *E*, formed with upturned arms at its ends having projecting lugs *e'*, a pair of cast-metal hoppers *H H'*, having projections at their ends meeting the ends of said arms and abutting against said lugs and fastened to said arms, and a pair of grating or cutting cylinders mounted beneath said hoppers on axial shafts turning in bearings in said frame.

4. In a culinary utensil, the combination of two hoppers *H H'*, cast integrally with webs *g g* joining them, supporting-frame *E E'* for said hopper-casting fastened thereto, and grating or cutting cylinders mounted rotatively beneath the hoppers and having bearing in said frame.

5. In a culinary utensil, the combination of cast-metal hoppers *H H'*, a supporting-frame *E* and standard *E'*, arranged in a vertical plane at one end of the hoppers, fastened rigidly thereto, and formed with shaft-bearings *a a'*, grating or cutting cylinders mounted beneath said hoppers on rotative shafts turning in said bearings, and sheet-metal chutes *F F'*, passing beneath the respective cylinders and hung from and fastened to said hoppers, whereby said chutes are supported by said frame *E E'* through the medium of the hopper-casting.

6. In a culinary utensil, a slicing-cylinder of sheet metal formed with elongated slots and having slicing-blades with outwardly-inclined cutting-edges formed by bending up the sheet metal at the edges of the slots, said slots being formed of greater width than the projection of the cutting-edges of the blades, whereby the thickness of the cut slices may be controlled by the operator, as described.

7. In a culinary utensil, the combination, with a stationary open-bottomed elongated hopper, of a sheet-metal grating and slicing cylinder mounted to revolve beneath it, formed between the middle and one end with grating-surfaces and between the middle and the opposite end with slicing-blades, said blades formed as the outwardly-turned edges

of longitudinal slots cut in the metal of the
cylinder and said slots being of greater
width than the outward projection of the cut-
ting-edges, whereby by placing a material in
5 one end of said hopper it may be grated or in
the other end thereof it may be sliced and
by pressing it more or less against the cylin-
der it may be cut in thicker or thinner slices.

In witness whereof I have hereunto signed
my name in the presence of two subscribing ro
witnesses.

BURTON H. COOK.

Witnesses:

GEORGE H. FRASER,
FRED WHITE.