A. ROSS.

GRATER.

APPLICATION FILED JULY 9, 1914.

1,228,247.

Patented May 29, 1917.

4 SHEETS—SHEET 1.

Fig. 1.

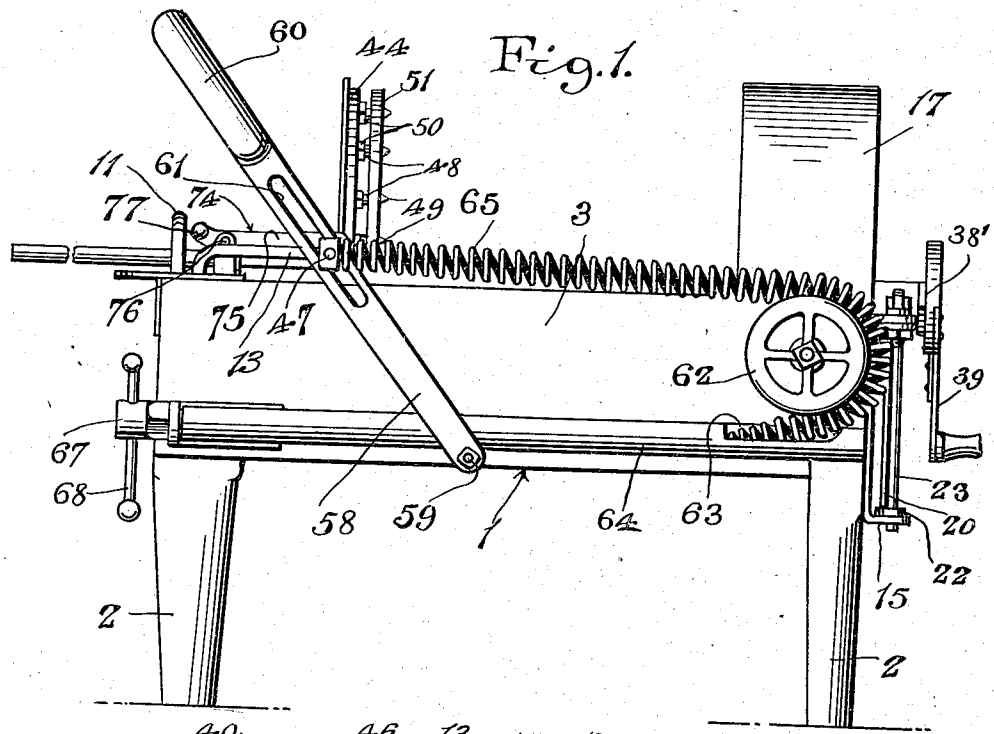
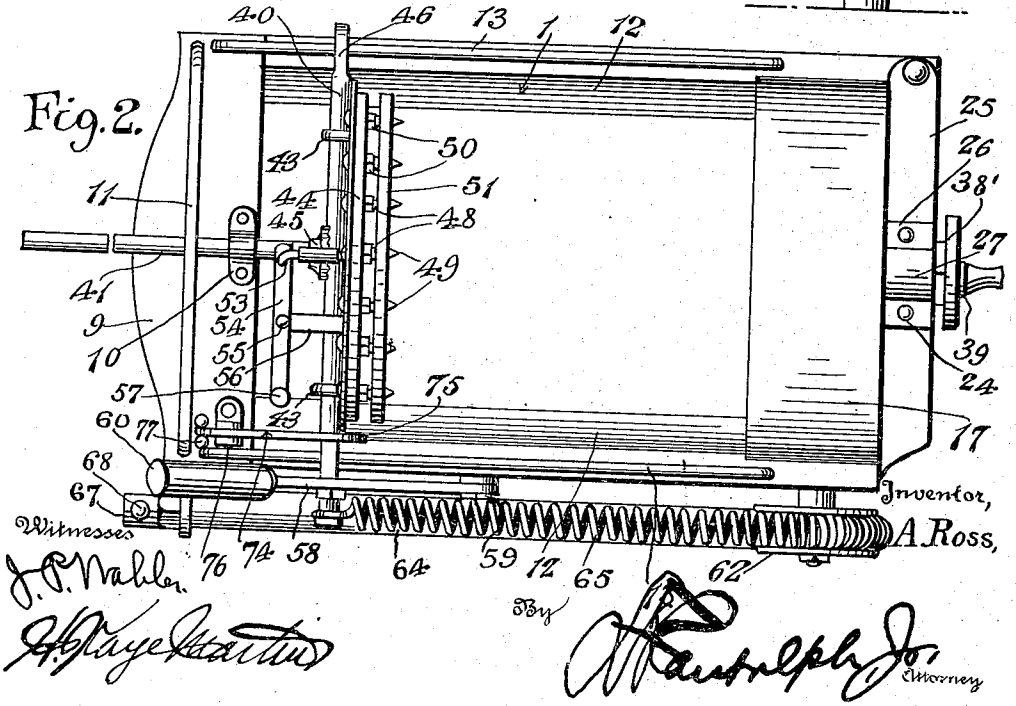


Fig. 2.



Witnesses

J. P. Wahler.

H. Kaye Martin

Inventor,

A. Ross,

By

Randolph & Co.

Attorney

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

A. ROSS.

GRATER.

APPLICATION FILED JULY 9, 1914.

1,228,247.

Patented May 29, 1917.

4 SHEETS—SHEET 2.

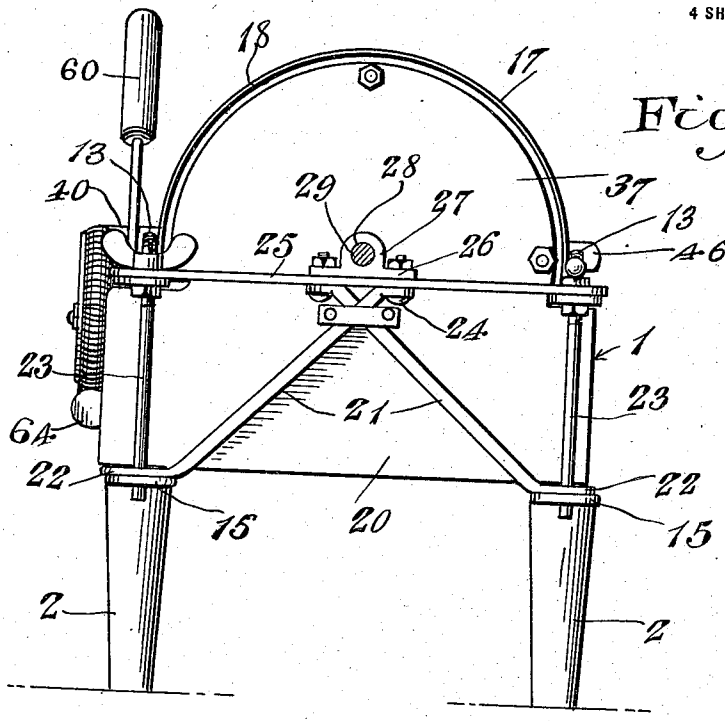


Fig. 3.

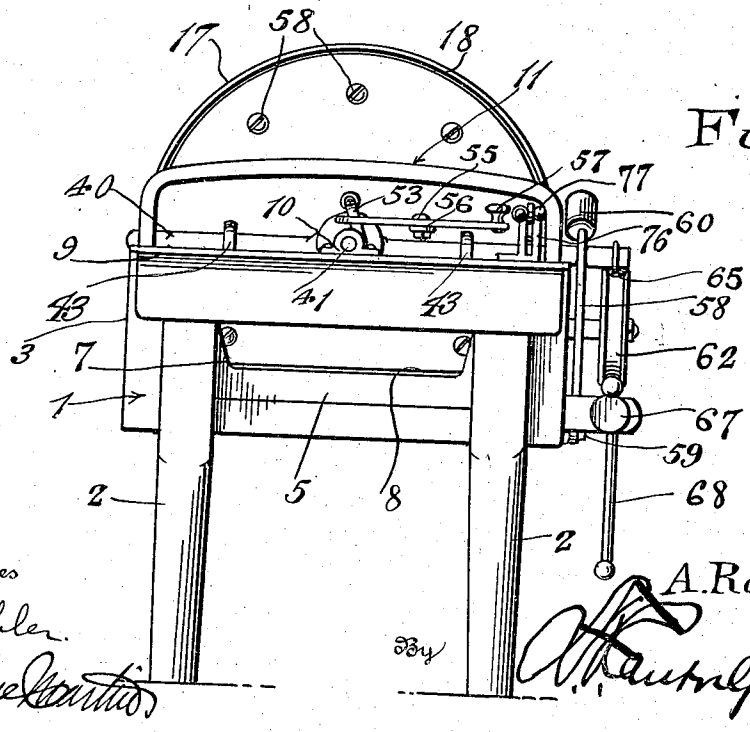


Fig. 4.

Witnesses

J. P. Mahler.

H. Hayes Barrett

Inventor

A. Ross,

By

Attorney

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

A. ROSS.

GRATER.

APPLICATION FILED JULY 9, 1914.

1,228,247.

Patented May 29, 1917.

4 SHEETS—SHEET 3.

Fig. 5.

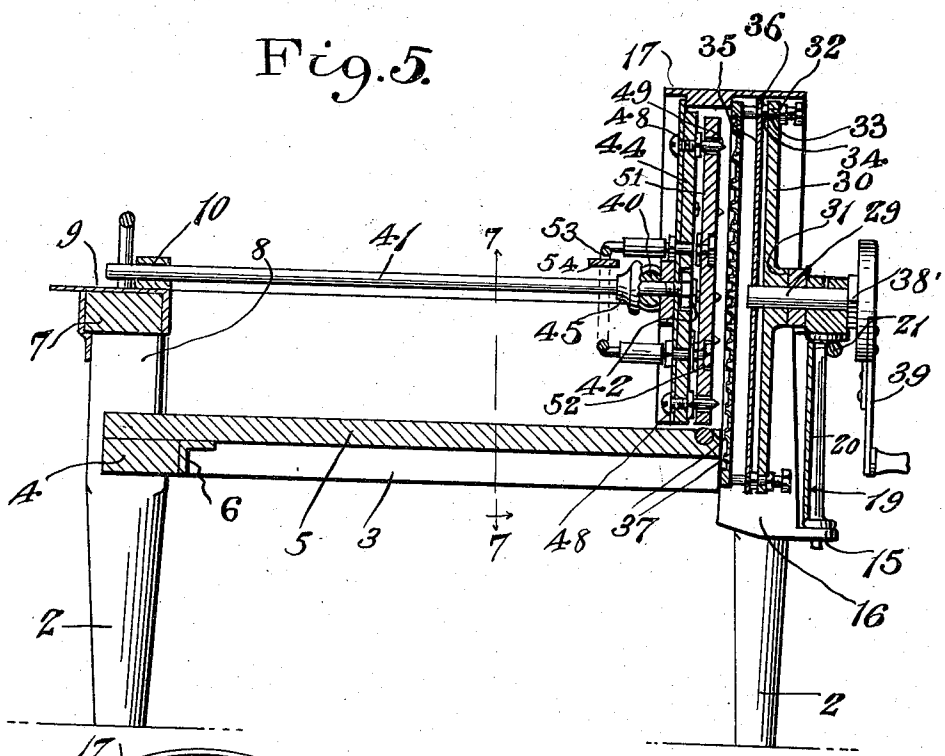


Fig. 7.

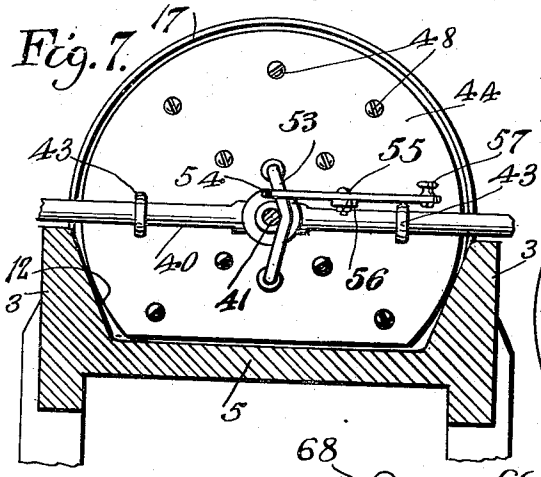


Fig. 8.

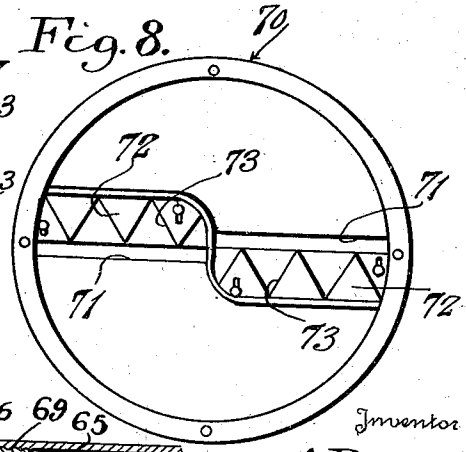
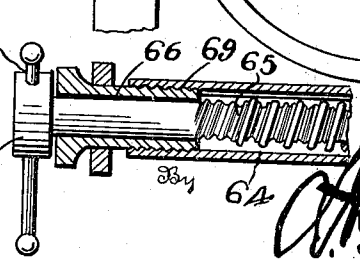


Fig. 9.



Witnesses

J. P. Wahler.

Inventor

A. Ross.

By

Attorney

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

A. ROSS.

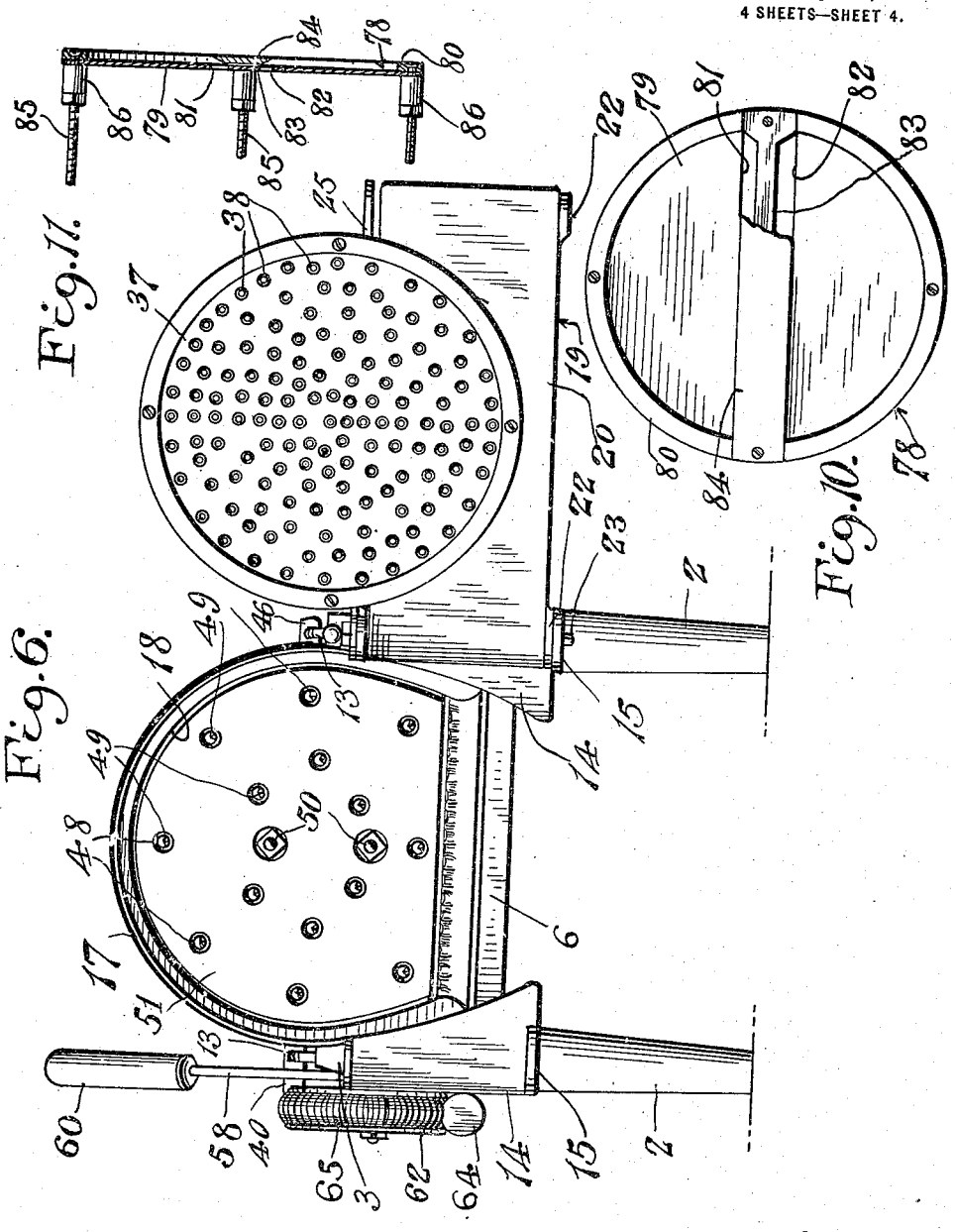
GRATER.

APPLICATION FILED JULY 9, 1914.

1,228,247.

Patented May 29, 1917.

4 SHEETS—SHEET 4.



Witnesses

J. C. Mahler.

H. Kaye Martin

Inventor,

A. Ross.

By A. Trumbull Jr.

Attorney

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

ANTONIO ROSS, OF UTICA, NEW YORK.

GRATER.

1,228,247. Specification of Letters Patent. Patented May 29, 1917.

Application filed July 9, 1914. Serial No. 850,003.

To all whom it may concern:

Be it known that I, ANTONIO ROSS, a citizen of the United States, residing at Utica, in the county of Oneida and State of New York, have invented certain new and useful Improvements in Graters; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to new and useful improvements in graters, and has for its principal object to provide a device which is particularly adapted for grating cheese or similar material.

Another object of the invention is to provide a device having interchangeable blades which may be used for grating or for cutting thin slices at the desire of the user.

A further object of the invention is to provide a novel method of feeding the material, which is being grated, against the cutter blade to insure a uniform product.

A still further object of the invention is to provide a novel means for supporting the material which is to be grated or sliced and also for removing the same from its supporting means.

With these and other objects in view, the invention consists in the novel combination and arrangement of parts which will be fully set forth in the following specification and accompanying drawings, in which,

Figure 1 is a side view in elevation of a grater constructed in accordance with this invention,

Fig. 2 is a top plan view thereof,

Fig. 3 is a front end view,

Fig. 4 is a rear end view,

Fig. 5 is a longitudinal sectional view,

Fig. 6 is a view similar to Fig. 3 showing the front portion swung open,

Fig. 7 is a transverse sectional view taken on line 7—7 of Fig. 5 and looking in the direction of the arrow,

Fig. 8 is a face view of one of the cutting blades,

Fig. 9 is an enlarged detail sectional view showing the spring adjusting means.

Fig. 10 is a face view of a modified form of cutting blade, and

Fig. 11 is a transverse sectional view thereof.

Referring now to the drawings by characters of reference, the numeral 1 designates as an entirety the frame of the device which is supported on the legs 2 carrying the upwardly extending side pieces 3. These side pieces 3 are held in spaced relation by means of the transversely extending member 4 which supports the bottom 5. A suitable angle bracket 6 is provided and is arranged to form a brace between the member 4 and the bottom 5 hereinbefore referred to.

A suitable inclosure 7 is secured to the side 3 and is provided with the horizontal opening 8 as clearly shown in Fig. 4. A suitable plate 9 is secured to the upper side of the closure 7 and supports the sleeve 10, the use of which will appear as the description proceeds. A suitable U-shaped member designated generally by the numeral 11, is arranged to bridge the space between the portions 3 as clearly shown in Fig. 4.

The inner faces of the walls 3 are beveled inwardly as at 12 and are arranged to conform to the shape of the material which is being grated. Extending longitudinally of the reduced edge of the walls 3 are the rods 13 which are arranged to form guides cooperating with the sleeve 10 hereinbefore referred to.

At the end of the walls 3 opposite the closure 7 are provided the plates 14 having the ears 15 formed thereon. These plates are provided with the inturned flanges 16 which are curved to conform to the curvature of the hood 17 which is provided with the reinforcing members 18, within which the follower, which will be more fully hereinafter described, is arranged to fit.

A suitable door 19, which comprises the body portion 20 carrying the reinforcing rods 21, is provided and the free ends of the reinforcing rods terminate in the ears 22, which are arranged to coöperate with the ears 15 to receive the pin 23 and thereby removably secure the door in place. The opposite terminals of the rods 21 are riveted or otherwise secured as at 24 to the upper flange 25 of the door and the ends of the flange are extended so as to coöperate with the remaining ears 15 in holding the door in place. The rivets or bolts 24, which support the upper ends of the rods 21 in place against the flange 25, project through the ears 26 which are formed on the bearing members 27 having the central aperture 28 in which the shaft 29, which will be more fully hereinafter described, is rotatably mounted.

The shaft 29, hereinbefore referred to, carries at its inner end the disk 30. This

disk 30 is provided with the enlarged nut 31 and has formed near its periphery a plurality of apertures 32, through which the bolts 33 carrying the nuts 34, extend. These bolts 33 are arranged to support the plate 35 and the nuts 34 are arranged to hold the said plate 35 in spaced relation with the disk 30 hereinbefore referred to. The forward ends of the bolts are extended as at 36 and are arranged to support the grating disk 37 having a plurality of apertures 38 formed therein. These apertures 38 are provided with the outturned roughened edges which are to be used for an obvious purpose. The opposite end of the shaft 29 is externally screw threaded and arranged to receive the end 38′ of the crank 39, by means of which the disk 30 is rotated.

Slidably supported on the rods 13 is a transverse bar 40 having a central aperture through which the rod 41 is arranged to project. This rod 41 is provided with a threaded extension carrying the nut 42 which cooperates with the U-bolts 43 in supporting the disk 44 in proper position. A suitable stop 45 is carried by the rod 41 and is arranged to limit the movement of the bar 40 with relation to the bar 41. Formed at the free end of the bar 40 are the flattened extensions 46 through which the bar 13 extends. One of these extensions 46 is provided with a groove in which the controlling lever, which will be more fully hereinafter described, is operatively mounted. A reduced extension 47 is formed on the grooved end of the bar 40 and is arranged to form a connection for the spring as will appear hereinafter.

Extending through the disk 44 are a plurality of bolts 48 having their ends sharpened as at 49. These bolts are held firmly in place by means of the nuts 50 and are arranged to slidably hold the disk 51 in position on the disk 44. This disk 51 is connected as at 52 to the free ends of the arms of the U-shaped member 53, the bight portion of which is extended through the lever 54 which is pivotally mounted as at 55 to the extension 56 carried by the disk 44. The opposite terminal of the lever is provided with a suitable knob 57 by means of which the operation of the lever is controlled. This disk 51 is arranged to form an ejector plate by means of which the material which is being grated is forced from the ends of the supporting members 48 upon operation of the knob 57.

A suitable controlling lever 58 is pivotally secured as at 59 to one of the sides 3 and is provided at its free terminal with the gripping elements 60 adjacent which is the longitudinal slot 61 through which the grooved end of one of the reduced extensions 46, projects. A suitable coil spring is pivotally connected to the extension 47 as illustrated in Fig. 1, and said spring extends over a grooved pulley wheel 62 and into the slot 63 formed in the tubular member 64. This tubular member 64 is arranged to form a guide for the spring to prevent the same from becoming accidentally displaced. The opposite end of the spring is extended through the tubular member 64 and threaded on to the threaded end 65 of the cylindrical member designated generally by the numeral 66. This cylindrical member is provided opposite its threaded end with the enlargement 67 through which the bar 68 forming the gripping member by means of which the device is rotated, extends. This cylindrical member 66 extends through and is rotatably mounted in the sleeve 69 which is held in the end of the tubular member 64 as illustrated in detail in Fig. 9.

When it is desired to use the device in slicing rather than grating the material upon which it is in operation, the cutter blade designated generally by the numeral 70, as illustrated in Fig. 8, is substituted in place of the grating blade 37. This cutter blade is provided with a pair of radial slots 71 with which the removable blades 72 coöperate. These blades 72 are provided with the edges 73, which when rotated, are arranged to slice the material upon which the device is operating, in thin slices.

The modified form of cutter blade, which is designated generally by the numeral 78, comprises a suitable disk 79 having secured thereto the rim 80. This disk 79 is provided with a slot 81 near its center which cooperates with the slot 82 in forming the central bar 83. A suitable cutter blade 84 is arranged to be secured to the disk and said blade is provided with beveled edges which coöperate with the slots 81 and 82 in slicing the material in the cutter. The usual holding or securing posts 85 are provided and carry the usual faces 86, by means of which the cutter blade is held in spaced relation with the rotary member 37 hereinbefore described.

In order to hold the follower hereinbefore described in its rearmost position, there is provided a suitable latch designated generally by the numeral 74 which comprises the pawl 75 which is pivotally secured as at 76 to one of the side walls 3. This pawl 75 is provided at its rear end with the knob 77 by means of which the device is controlled, and at its forward end with a suitable hook hook member which is arranged to hook over the transverse bar 40 to hold the same against movement. A suitable stop is also provided and arranged to coöperate with the latch member 74 to limit the movement of the follower.

It will be apparent from the foregoing that in use the material which is to be grated or sliced, is placed in the space between the

follower and the blade. The pawl is then released and the follower permitted, under the influence of the spring, to slide forward so that the material upon which the device is to operate is forced against the grating or slicing blade. The crank 39 is then rotated and it will be apparent that the roughened portion of the grater will engage the material upon which it is to operate and thereby cause the same to be finely ground and a uniform product is thereby obtained.

While in the foregoing there has been shown and described the preferred embodiment of this invention, it is to be understood that such changes may be made in the combination and arrangement of parts as will fall within the spirit and scope of the invention as defined in the appended claim.

Having thus described my invention, I claim:

A grater of the character set forth including a support, a trough mounted upon said support, a pair of guides arranged on the upper edges of said trough, a cutter mounted at one end of the trough, a follower slidably mounted within the trough, means for supporting said follower to permit the same to move longitudinally within the trough, a transverse bar slidably mounted on the guides and connected to said follower, one end of said bar projecting beyond the sides of said trough, a lever provided with a slot intermediate its ends, said slot connecting said transverse bar of the follower with the lever, a rod to hold the follower in its rearmost position, spring means to exert pull on the follower to urge the same toward the cutter, means to adjust the tension of the spring to urge the follower toward the cutter, and means to limit the movement of the follower in its sliding movement in the trough.

In testimony whereof I affix my signature in presence of witnesses.

his
ANTONIO × ROSS.
mark

Witnesses:
CHAS. G. RICHER,
JOHN ONUZELLO,
C. SCALA.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."