

No. 756,413.

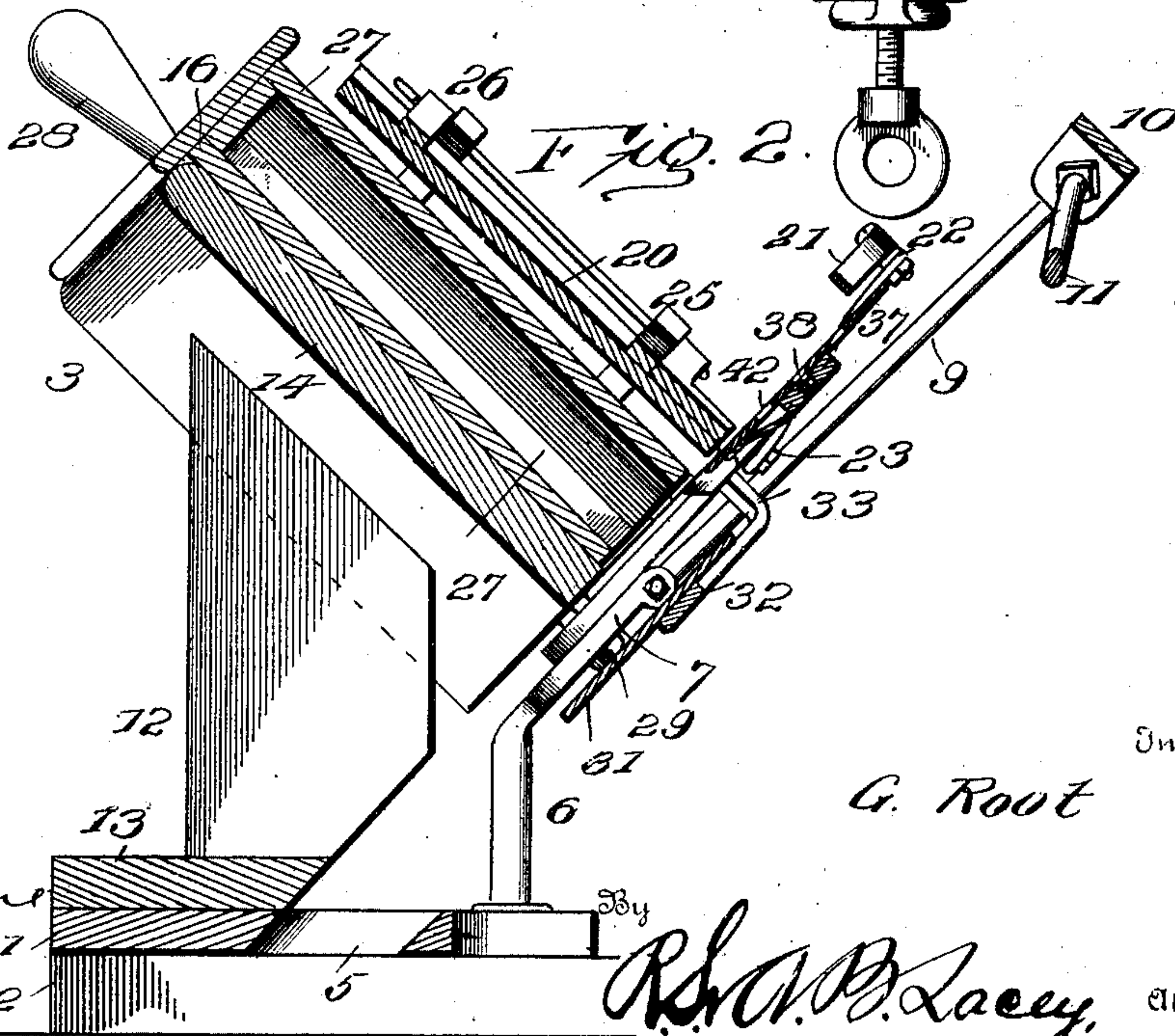
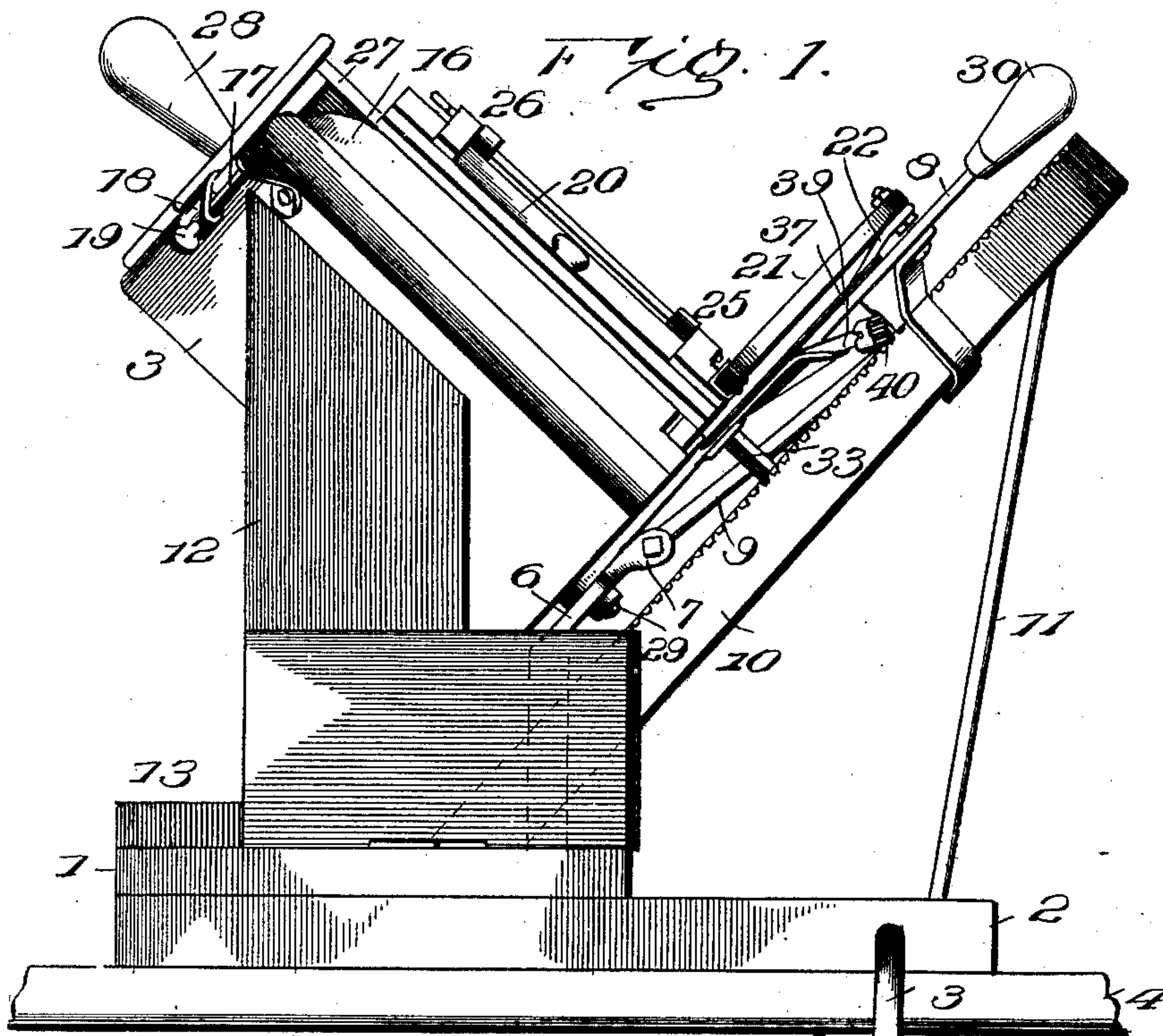
PATENTED APR. 5, 1904.

G. ROOT.  
BREAD SLICER.

APPLICATION FILED SEPT. 1, 1903.

NO MODEL.

2 SHEETS—SHEET 1.



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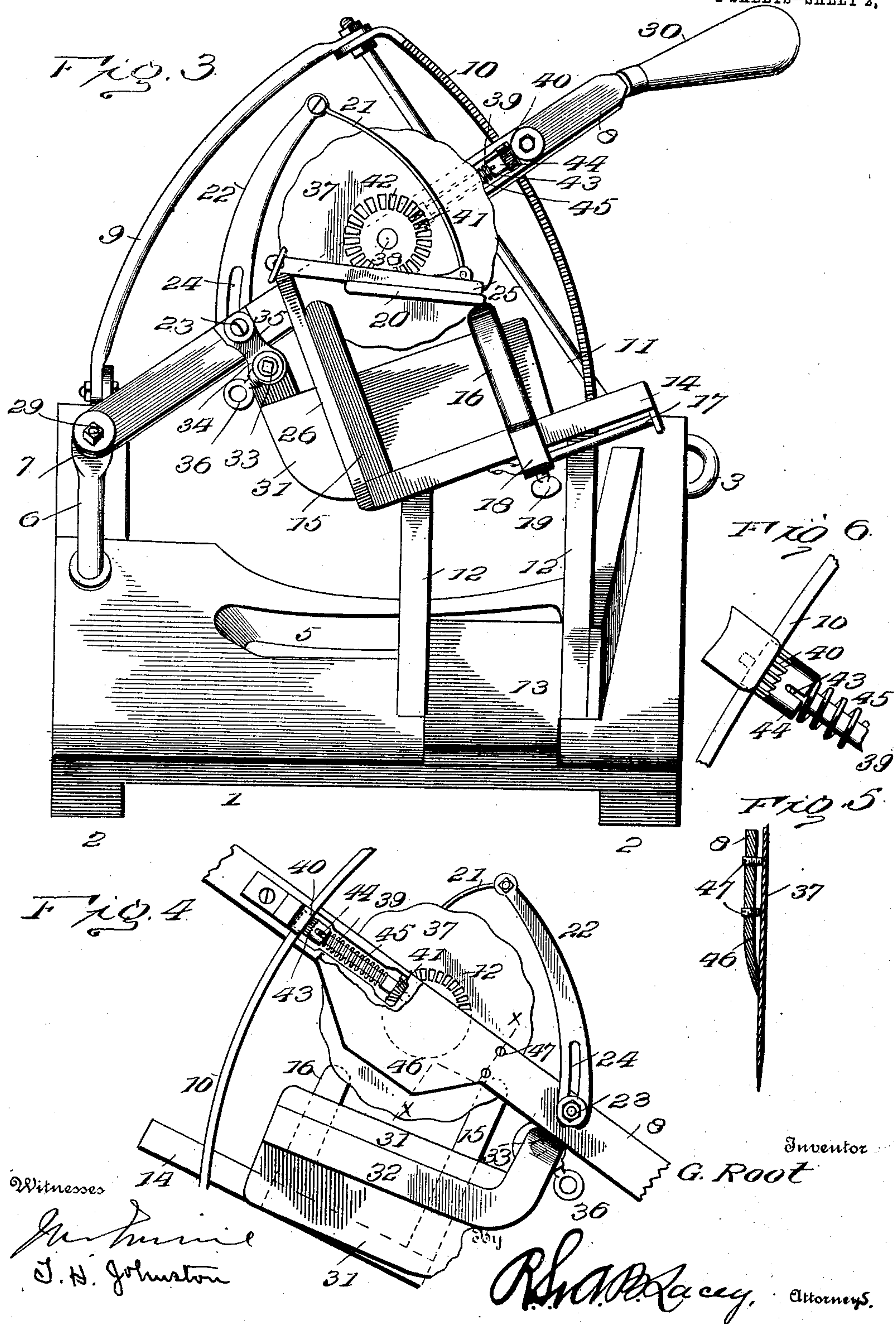
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# UNITED STATES PATENT OFFICE.

GUSTAF ROOT, OF TILLY FOSTER, NEW YORK.

## BREAD-SLICER.

SPECIFICATION forming part of Letters Patent No. 756,413, dated April 5, 1904.

Application filed September 1, 1903. Serial No. 171,538. (No model.)

*To all whom it may concern:*

Be it known that I, GUSTAF ROOT, a citizen of the United States, residing at Tilly Foster, in the county of Putnam and State of New York, have invented certain new and useful Improvements in Bread-Slicers, of which the following is a specification.

This invention appertains to the type of cutting apparatus designed most especially for slicing bread when it is desired to have the slices uniform, even in texture, smooth, and the cellular structure unbroken.

The invention provides a machine of such construction as will enable the work to be performed rapidly, effectively, and in a satisfactory manner and which will admit of the thickness of the slices to be cut being varied at will.

For a full description of the invention and the merits thereof and also to acquire a knowledge of the details of construction of the means for effecting the result reference is to be had to the following description and drawings hereto attached.

While the essential and characteristic features of the invention are susceptible of modification, still the preferred embodiment of the invention is illustrated in the accompanying drawings, in which—

Figure 1 is a side view of a machine embodying the essential features of the invention. Fig. 2 is a central longitudinal section thereof. Fig. 3 is a front view of the machine. Fig. 4 is a detail view of the intermediate portion of the cutter-lever, the rotary cutter, the gage, the pressure-plate, and the means for imparting a rotary movement to the cutter as the cutter-lever is moved downward, as in the act of cutting the slice. Fig. 5 is a sectional detail of the cutter-lever, cutter, and steadying means about on the line X X of Fig. 4, showing the parts on a larger scale. Fig. 6 is a detail view, on a larger scale, of the end of the shaft for transmitting motion to the cutter, showing the pinion and clutch.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

The platform 1 is mounted upon sills or bars 2, which are extended at one end and provided with clamps 3 for securance of the machine to a table, stand, or analogous support 4. A delivery-opening 5 is formed in the platform 1 for the escape of the slices as they are cut from the loaf. The opening 5 is inclined transversely, as shown most clearly in Fig. 2, so as not to obstruct the free delivery of the slices, yet provide a clearance-way. A post 6 is located at one side of the platform, and its upper end is deflected or inclined to the vertical, as indicated at 7, so as to give the proper set to the cutter-lever 8, which is pivoted at one end thereto. A curved brace 9 is secured at one end to a lug of the deflected end portion of the post 6, and its opposite end is secured to the upper end of a curved rack-bar 10, the lower end of which is fastened to the platform 1 in any substantial way. The rack-bar 10 is formed on the arc of a circle whose center coincides with the pivot of the cutter-lever 8. A brace 11 is secured at its upper end to the parts 9 and 10 at their points of juncture and is attached at its lower end to a bar or sill 2, said brace being inclined to the plane of the parts 9 and 10, so as to hold them in proper position.

Uprights 12 project vertically from the platform 1 and are firmly connected at their lower ends thereto and support a hopper, chute, or box 3, which is longitudinally inclined to the horizontal, so as to advance the loaf by gravitational force as each slice is cut. The uprights 12 are preferably secured at their lower ends to a block 13, which is fastened to the platform 1 in any secure and rigid manner. The front edge of the block 13, as well as a portion of the lower end of the uprights 12, is beveled to correspond to the inclined wall of the delivery-opening 5, so as not to obstruct the passage of the slices in their discharge from the machine.

The hopper, chute, or box 3 comprises a bottom 14, a fixed side wall 15, and a laterally-adjustable side wall 16, movable upon the bottom 14, so as to vary the space between the walls 15 and 16 according to the size of the loaf to be cut up into slices. The movable



side wall 16 is adapted to be secured in the adjusted position by any determinate means, and, as shown, a rod 17 is connected to the upper rear end of the bottom 14, and the side 5 16 is provided with an iron 18, slidable upon the rod 17 and provided with a clamp-screw 19 to bear against the rod 17 and hold the side wall 16 in the desired position. The pressure-plate 20 is pivotally connected to the hopper 10 or box and is arranged in such a manner as to move with the cutter-lever 8 to alternately release and clamp the loaf. To prevent injurious pressure of the pressure-plate upon the loaf, a spring 21 forms a part of the connection 15 between said pressure-plate and cutter-lever, said spring being connected at one end to the pressure-plate and at its opposite end to an arm 22, having adjustable connection at its lower end with the cutter-lever by means 20 of a bolt or fastening 23, passed through an opening in the lever 8 and through a slot 24 of the arm 22. Strips 25 are secured to the upper side of the pressure-plate 20 and are extended beyond a longitudinal edge thereof 25 and are pivotally connected to the upper ends of corresponding strips 26, secured to the outer side of the stationary wall 15 of the hopper. The spring 21 is of the flat type and is curved or bowed, so as to yield upon contact of the 30 pressure-plate with the loaf without preventing continued downward movement of the cutter-lever at its handle end. The hopper, chute, or box 3 inclines both longitudinally and transversely, so as to cause the loaf placed 35 therein to rest and bear against the stationary wall 15. A follower 27 is freely movable within the hopper to help feed the bread as the slices are cut. This follower 27 may be of any construction and, as indicated in Fig. 2 of the 40 drawings, is hollow and is provided with a handle or grip 28 for convenience of operation.

The cutter-lever 8 is secured to the post 6 by any type of pivot-fastening 29 and is provided at its opposite end with a grip 30, which 45 constitutes a handle. A gage 31 is carried by the cutter-lever and is adapted to project across the hopper and limit the forward movement of the loaf placed therein to be cut up into slices. The gage 31 consists of a light 50 plate stiffened and strengthened by a reinforcing-bar 32, which is extended at one end and bent at a right angle and provided with a lateral stem 33 to enter a socket 34, provided at one end of a plate 35, adjustably 55 connected to the cutter-lever 8 by means of the fastening 23, employed for adjustably connecting the arm 22 thereto. A clamp-screw 36 is threaded into a side of the socket 34 and is adapted to bear at its inner end against the 60 stem 33 and secure the latter and the gage in an adjusted position. The gage inclines in conformity to the inclination of the cutter-lever and moves with the latter, so as to direct the slice when completely severed from 65 the loaf to the delivery-opening 5. The cut-

ter 37 consists of a circular blade or disk and is pivotally connected to the cutter-lever by means of the pivot-fastening 38, and its edge is serrated, scalloped, or waved, so as to insure and facilitate smooth severance of the 70 slices from the loaf. Positive rotary movement is imparted to the cutter 37 upon the descent of the cutter-lever at its free end, and this result is effected by means of the shaft 39, mounted in bearings of the cutter-lever and 75 provided at opposite ends with pinions 40 and 41, which mesh with, respectively, teeth of the rack-bar 10 and cutter 37. The teeth of the cutter 37 may be of any formation and are concentric with the pivot connection 38 80 and preferably formed by openings or depressions 42 of the said cutter 37, so as not to offer or present any projecting parts to interfere with the operation of the cutter. A ratchet-clutch 43 is interposed between the 85 shaft 39 and the pinion 40 to admit of return of the cutter-lever to a normal position without imparting any rotary movement to the cutter 37. The movable member 44 of the ratchet-clutch may be secured to the shaft 39 90 in any accustomed manner, so as to turn therewith, yet have a free longitudinal play to admit of the ratchet-teeth of the clutch members riding upon one another during the return movement of the cutter-lever to an initial position. A spring 45, mounted upon the 95 shaft 39, normally exerts a pressure upon the movable clutch member 44 to hold its teeth in engagement with the teeth of the pinion 40, so as to insure rotation of the cutter 37 100 when the lever 8 is moved to effect a slicing of the bread or other material to be cut into pieces of determinate size.

The loaf of bread or other material to be sliced is placed within the hopper, chute, or 105 box 3, the movable side wall 16 being shifted, so as to snugly receive the loaf between the walls 15 and 16. The gage 31 is adjusted so that the space between it and the plane of movement of the cutter 37 corresponds to the 110 thickness of the slice to be cut. Upon pressing downward upon the free end of the cutter-lever 8 the cutter 37 is advanced and is simultaneously rotated through the instrumentality of the shaft 39 and coöperating gearing 10 115 and 40 and 41 and 42, and the slice when severed from the loaf is received upon the gage 31 and directed thereby to the delivery-opening 5, through which it passes into a receptacle (not shown) or other contrivance deter- 120 mined upon to receive the slices. As the free end of the cutter-lever is depressed the pressure-plate 20 is moved downward until it comes in contact with the loaf, thereby holding the same securely until the slice is cut 125 therefrom, the spring 21 providing for a continued movement of the cutter-lever after the pressure-blade has been arrested in its movement by contact with the loaf. After the slice has been cut the spring 21, regaining 130



itself, gives an initial movement to the cutter-lever in its return stroke, the loaf being held from slipping until the cutter-lever is nearly at the limit of its return stroke and the gage 5 31 is in proper position to limit the feed or advance of the loaf to bring the next slice in position to be cut.

By having the arm 22 adjustably connected with the cutter-lever provision is had for adjustably connecting the pressure-plates to the 10 cutter-lever to allow for different sizes of loaves. The cutter-lever 8 is widened intermediate of its ends, as shown at 46, and this widened portion is tapered in thickness to a 15 feather-edge, which bears against the outer side of the cutter 37, so as to prevent injurious contact of the slice cut from the loaf with the lower edge of the cutter-lever, which would result if a projecting part was provided. 20 The shaft 39, spring 45, and pinion 40 are confined between a cutter 37 and the part of the cutter-lever, so as not to come in contact with the slice. The cutter 37 is adjusted and steadied with reference to the cutter-lever 8 25 by means of set-screws 47, which are threaded into openings of the cutter-lever and are adapted to bear at their inner ends against the cutter 37, as shown most clearly in Fig. 5.

Having thus described the invention, what 30 is claimed as new is—

1. In combination, a hopper, a movable cutter, a pressure-plate, and a yielding connection between the pressure-plate and cutter to admit of a continued movement of the cutter 35 after the pressure-plate has been arrested by contact with the material to be sliced, substantially as described.

2. In combination, a hopper, a movable cutter, a pressure-plate, and a curved spring

serving to connect the pressure-plate with the 40 cutter, substantially as set forth.

3. In combination, a hopper, a movable cutter, a pressure-plate, an arm adjustably connected with the cutter, and a spring connecting said arm with the pressure-plate, substan- 45 tially as set forth.

4. In combination, means for supporting the material to be sliced, a rotary cutter having a circular series of radial slots, a lever having the rotary cutter journaled thereto, a curved 50 rack-bar, a shaft journaled to said lever, a toothed pinion carried by the shaft and engaging the slots in the rotary cutter, gearing between said shaft and rack-bar, and a ratchet-clutch mounted upon said shaft and arranged 55 to insure rotation of the cutter when advanced and to prevent rotary movement being imparted to said cutter when returning to a normal position, substantially as specified.

5. In combination, means for supporting 60 the material to be sliced, a lever having a portion intermediate of its ends widened and tapered in thickness to a feather-edge, a cutter journaled to the lever opposite the widened portion and having the tapered edge of the 65 latter bearing against the outer side thereof, and means for imparting rotary motion to the cutter on the downstroke of the lever, said means including a part confined between the rotary cutter and a portion of the lever, sub- 70 stantially as described.

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

GUSTAF ROOT. [L. s.]

Witnesses:

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