(No Model.)

E. CHURCH.

APPLE SLICER.

No. 464,674. Patented Dec. 8, 1891.

Fig. 1.

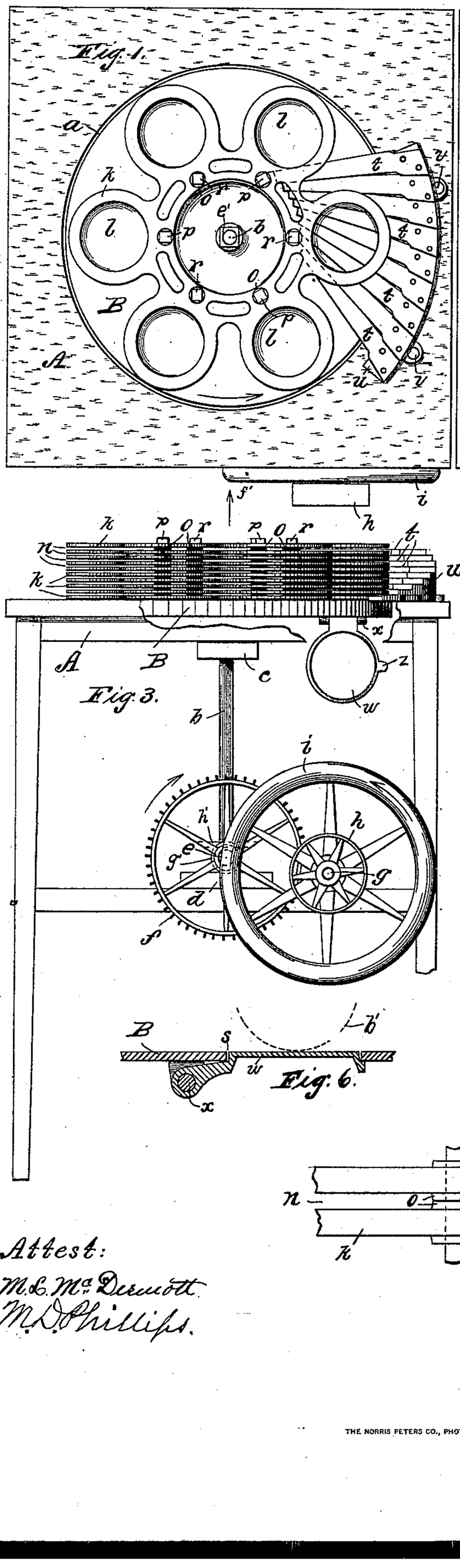


Fig. 2.

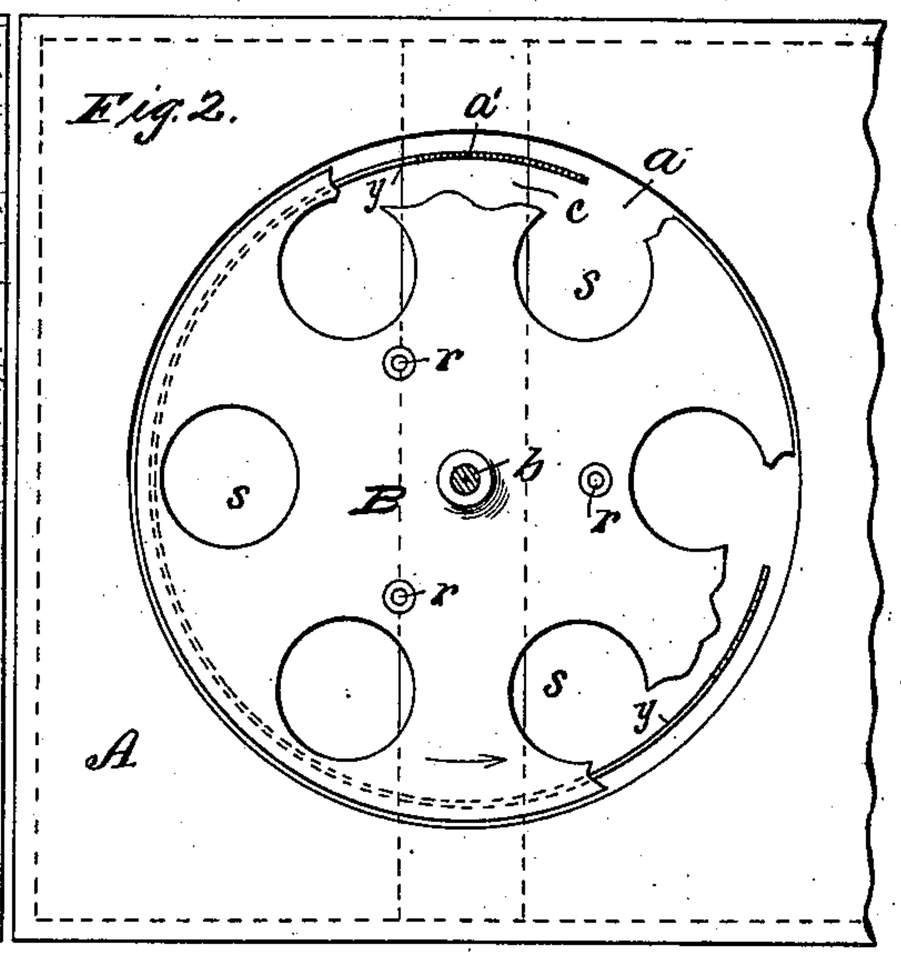


Fig. 3.

Fig. 8.

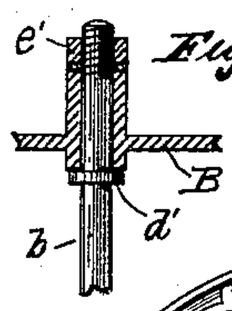


Fig. 4.

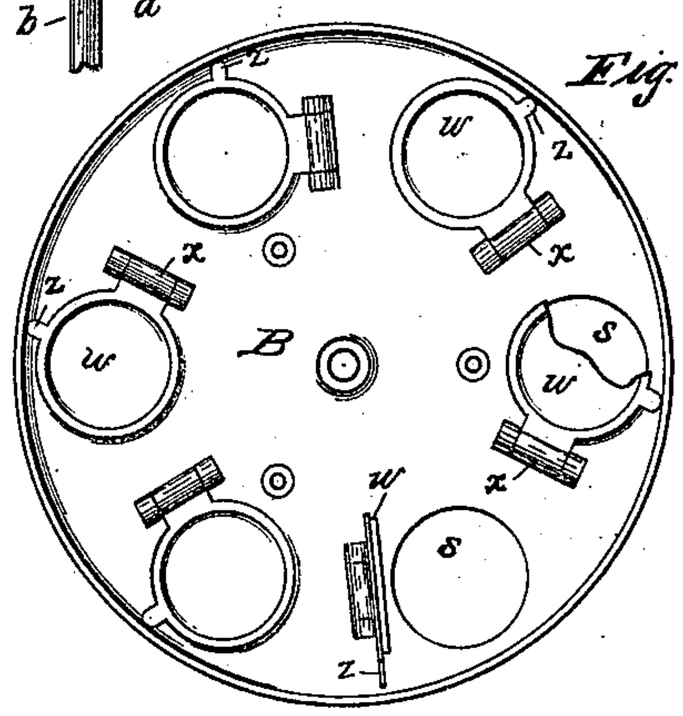


Fig. 6.

Fig. 5.

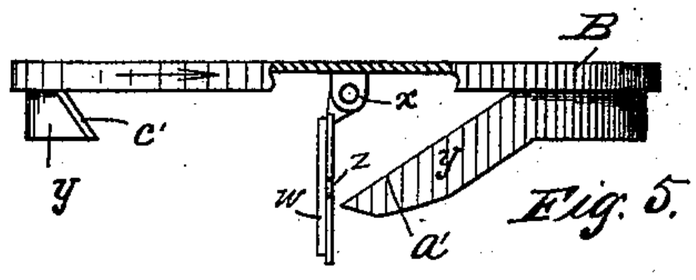
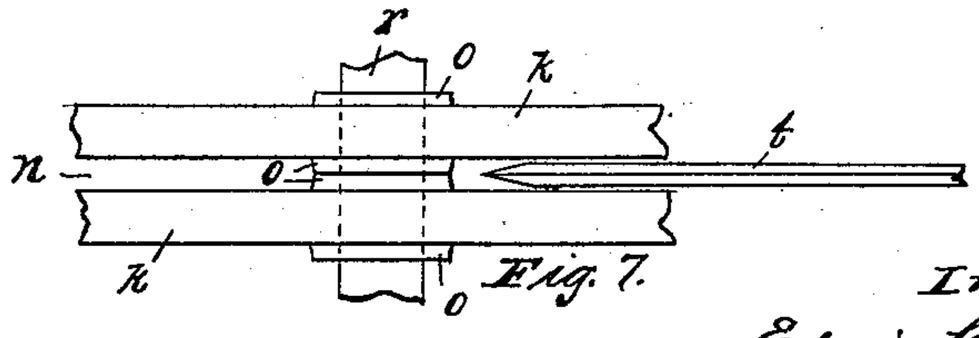


Fig. 7.



Attest:
M. L. McDermott.
M. D. Phillips.

Inventor:
Edwin Church.
By E. B. Whitmore, Atty.

UNITED STATES PATENT OFFICE.

EDWIN CHURCH, OF WILLIAMSON, NEW YORK.

APPLE-SLICER.

SPECIFICATION forming part of Letters Patent No. 464,674, dated December 8, 1891.

Application filed July 10, 1891. Serial No. 399,019. (No model.)

To all whom it may concern:

Be it known that I, EDWIN CHURCH, of Williamson, in the county of Wayne and State of New York, have invented a new and useful Improvement in Apple-Slicers, which improvement is fully set forth in the following specification and shown in the accompanying drawings.

My invention relates to the class of apple-slicers in which the apple (having first been pared and cored) is carried by a revolving disk against a series or bunch of rigid knives, serving to cut the apple into thin slices of uniform thickness.

The invention is hereinafter more fully described, and particularly pointed out in the claims.

Referring to the drawings, Figure 1 is a plan of the device. Fig. 2 is a plan of the carrying-disk, parts being broken away. Fig. 3 is a side elevation, seen as indicated by arrow *f'* in Fig. 1, parts of the table being broken away. Fig. 4 is a view of the under side of the carrying-disk. Fig. 5 is an edge of the disk drawn to show the relation between the cam-ring and the bottom plates of the pockets. Fig. 6, drawn to a larger scale, is a diametrical section of a pocket bottom plate and adjacent part of the disk. Fig. 7, drawn to a large scale, betters shows the form of the spacers and the relation between the knives and rings. Fig. 8 shows the manner of securing the disk to the spindle.

Referring to the parts, A is a suitable table or stand for holding the parts, formed with a circular opening *a* in the top. B is a disk of iron, occupying said opening in the table, the surface of the disk being about even with the surface of the table. The disk is mounted upon a vertical spindle *b*, having its bearings in cross-timbers *c d* of the table.

e is a horizontal shaft held in the table, carrying a spur-gear *f*, and a bevel-pinion *g'* to engage a bevel-gear *h'* on the spindle.

g is a shaft provided with a belt-pulley *h*, inertia-wheel *i*, and pinion of common kind (not shown) to engage the gear *f*. These parts constitute a driving mechanism for the disk, which mechanism is, however, not claimed to be new, and the same may all be dispensed with and the carrying-disk driven by means of a hand-crank or a treadle, as may be desired.

Upon the disk is mounted a series of rings *k*, forming pockets *l*, in which to receive the apples to be sliced, there being one apple (*b'*, Fig. 6) in each pocket. These rings are uniform and placed one above another, as shown in Fig. 3, and separated by spacing-bosses *o* to form spaces *n*. These rings, ten (more or less) in number, are bolted together as into a single piece by bolts *p p p*, passing vertically through them and threaded into the lowest one. This nest of rings is also bolted to the disk by bolts *r r r*, passing vertically through it and threaded into the disk.

t are a series or bunch of knives held in horizontal positions by being secured to a step-block *u*, secured to the top of the table by fasteners *v*. These knives are held so that each one enters a space *n* between the rings, there being one knife in each space, as shown in Figs. 3 and 7. These knives are preferably not radial with the disk, but correspond to secant lines for the purpose of giving them a drawing cut on the apples. These knives are of a length to extend beyond the inner sides of the pockets as the latter are brought round, as shown in Fig. 1, and as an apple in a pocket is carried against the knives it is completely cut into slices, the distance from the lowest to the highest knife being equal to or exceeding the diameter of the apple.

Beneath each pocket the disk is formed with an opening *s*, Fig. 2, down through which the slices of the cut apple drop into some suitable receptacle beneath. Each one of these openings is closed by a bottom plate *w*, hinged to the disk at *x*, as shown. Beneath the disk is a hoop or cam-ring *y*, forming a track, upon which ears or projections *z* of the respective bottom plates ride as the disk revolves. The office of this ring is to hold the plates *w* normally against the disk to close the opening *s*. This cam-ring is not continuous, but is open at one side, as shown in Figs. 2 and 5, the ends being inclined. This opening in the ring permits each plate *w* as the latter is brought around to fall away from the disk by gravity and temporarily open the pocket that chances to be passing the knives to let the slices of the apples drop through.

The cam-ring is relatively so located that each pocket is open at about the time the first or lowest knife has cut half or two-thirds of the way through the apple, and closed soon after passing the upper and last knife.

The raising or closing of the plates or bottoms *w* of the pockets is effected by the ears *z* of the respective plates sliding up the incline *a'* of the cam-ring. When the ears slide in succession down the inclined end *c'* of the ring, the plates fall and open the pockets, as stated.

The disk B is secured to the spindle *b* by a nut *e'*, pressing it against a collar *d'*, Fig. 8, rigid with the spindle. The nut is turned down against the hub of the disk sufficiently tight to hold the latter by friction, the disk not being held by other positive means to turn with the spindle. This is to guard against accident to the knives and other parts should some hard or unyielding body be unintentionally received into a pocket and brought against the knives. When too great a pressure is brought against the knives, the disk will slip on the spindle and so prevent an overstress upon the parts. By cutting the slices successively from the bottom of the apple and allowing them to drop singly and separate from each other to the receptacle below prevents them from sticking together, which is desirable in the subsequent handling of the fruit; also, the knives being closely bunched, as shown, several of them are caused to be embedded in and cutting the apple simultaneously, which serves to hold the apple steady in place during the process of slicing. This serves to prevent the slices from crumbling, and also prevents parts of the apple from being separated into chunks of undesirable form and size.

What I claim as my invention is—

1. A device for slicing apples, consisting of a table formed with a circular opening and provided with a series of horizontal knives, in combination with a revolving disk in said circular opening carrying a series of rings placed one above another, with spaces between them, said rings forming pockets for the apples, and the knives occupying the respective spaces between the rings, substantially as shown and described.

2. A device for slicing apples, consisting of a table provided with a series of horizontal rigid knives, in combination with a revolving disk in the table carrying a series of open rings placed one above another, with spaces between them, the rings forming pockets for the apples and the knives occupying said respective spaces between the rings, the disk being formed with an opening beneath each pocket, and a closing-plate for each of said openings in the disk, substantially as shown and described.

3. An apple-slicer consisting of a series of horizontal knives held at different elevations, in combination with a disk carrying a series of spaced rings placed one over another, the rings forming pockets to receive the apples and the knives occupying the spaces between the disks, the latter being formed with an opening beneath each pocket and a hinged closing-plate for each of said openings, and a cam-ring to operate said closing-plates, substantially as described and shown.

4. An apple-slicing device consisting of a revolving disk and a series of spaced rings thereon forming pockets for the apples, in combination with a series of knives alternated with the rings and a rotary carrying-spindle for the disk, said disk and spindle being held to turn together by friction and without positive means to cause them to turn together, substantially as and for the purpose set forth.

5. An apple-slicer consisting of a revolving disk and a series of spaced rings mounted thereon, in combination with a series of rigid knives alternated with the rings, said knives corresponding with secant lines of the disk, substantially as shown and described.

6. A device for slicing apples, having, in combination with a revolving disk, a series of spaced pocket-rings on the disk and a series of retreating knives, one between each two adjacent rings, said knives being held at points beyond the periphery of the disk and pointed substantially toward its axis and so arranged that two or more shall simultaneously cross a pocket as the latter is caused to pass them, substantially as shown and described.

7. In an apple-slicer, a revolving disk formed with openings therein and a series of pockets on the disk for holding the apple, one pocket being over each opening in the disk, in combination with a series of knives to act conjointly with the disk, a series of closing-plates for said openings in the disk, and a cam-ring beneath the disk to operate said closing-plates, the latter being each provided with a projecting part to meet the cam-ring, said cam-ring being discontinuous and having inclined ends, substantially as shown.

In witness whereof I have hereunto set my hand, this 25th day of June, 1891, in the presence of two subscribing witnesses.

EDWIN CHURCH.

Witnesses:

E. B. WHITMORE,

M. L. MCDERMOTT.