

J. K. SHIBATA.  
POTATO CUTTER.  
APPLICATION FILED AUG. 21, 1913.

1,094,604.

Patented Apr. 28, 1914.  
3 SHEETS—SHEET 1.

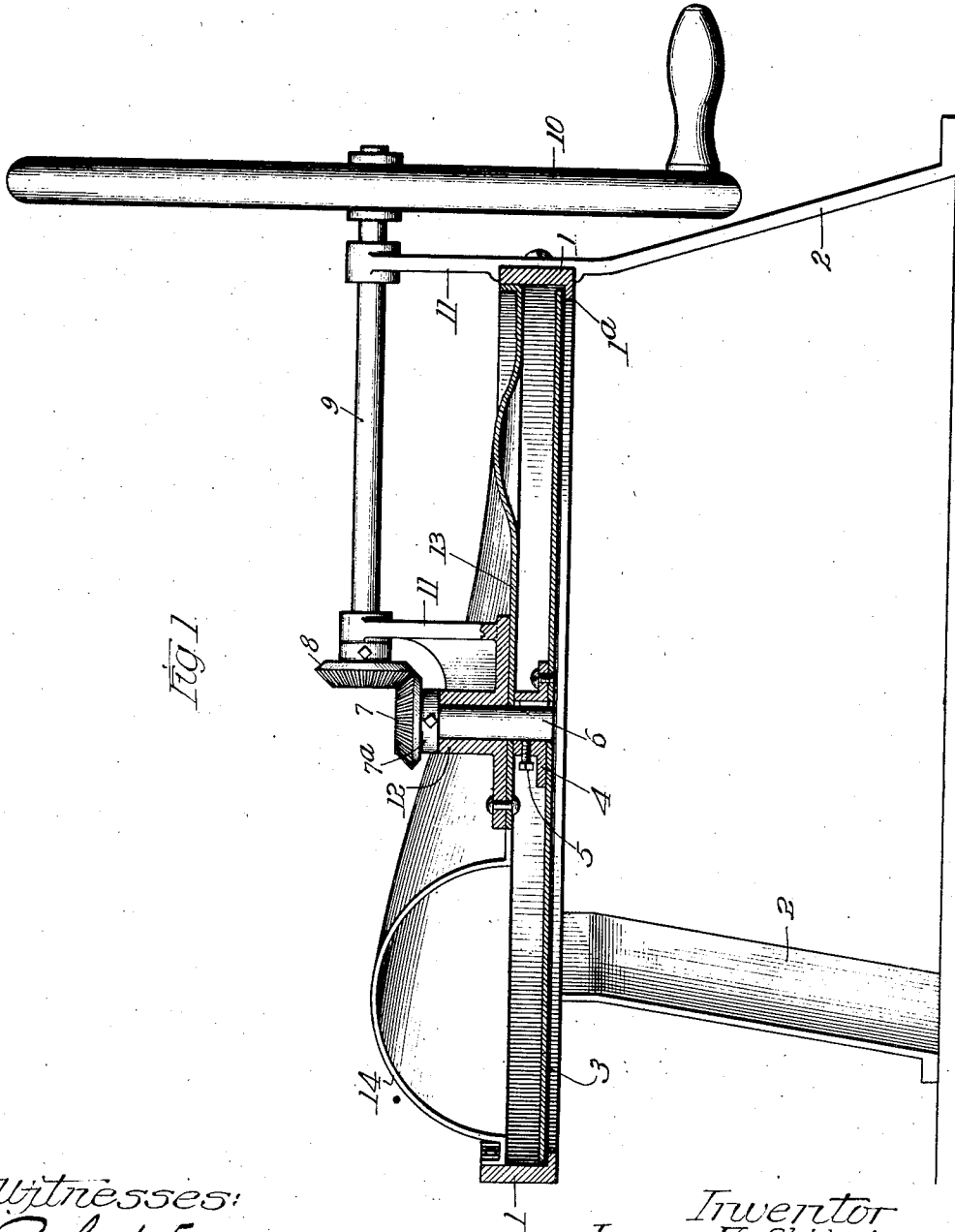


Fig 1

Witnesses:  
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Arthur W. Carlson

Inventor  
James K. Shibata  
By Cheever & Cox  
Attys:

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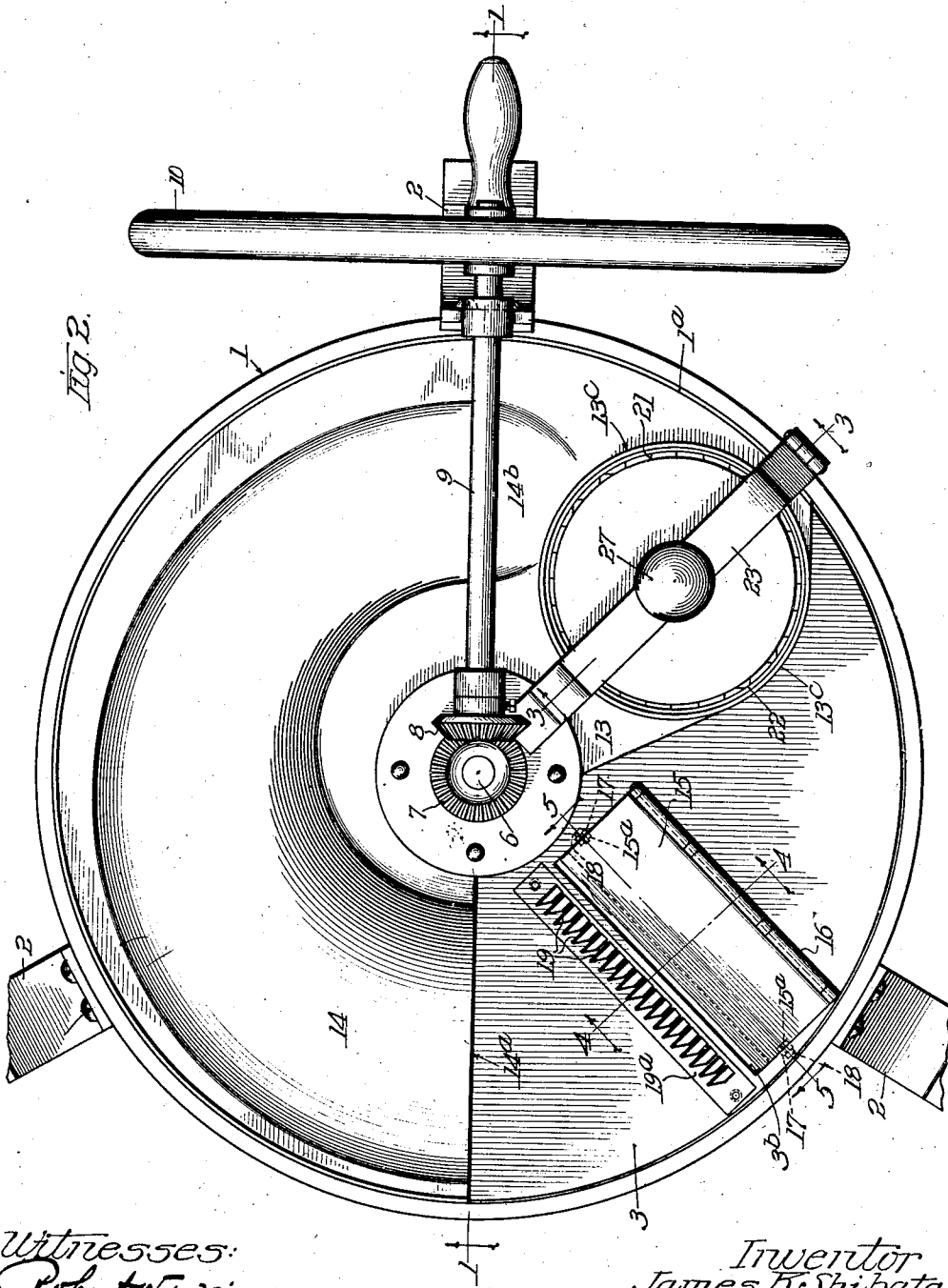


Fig. 2.

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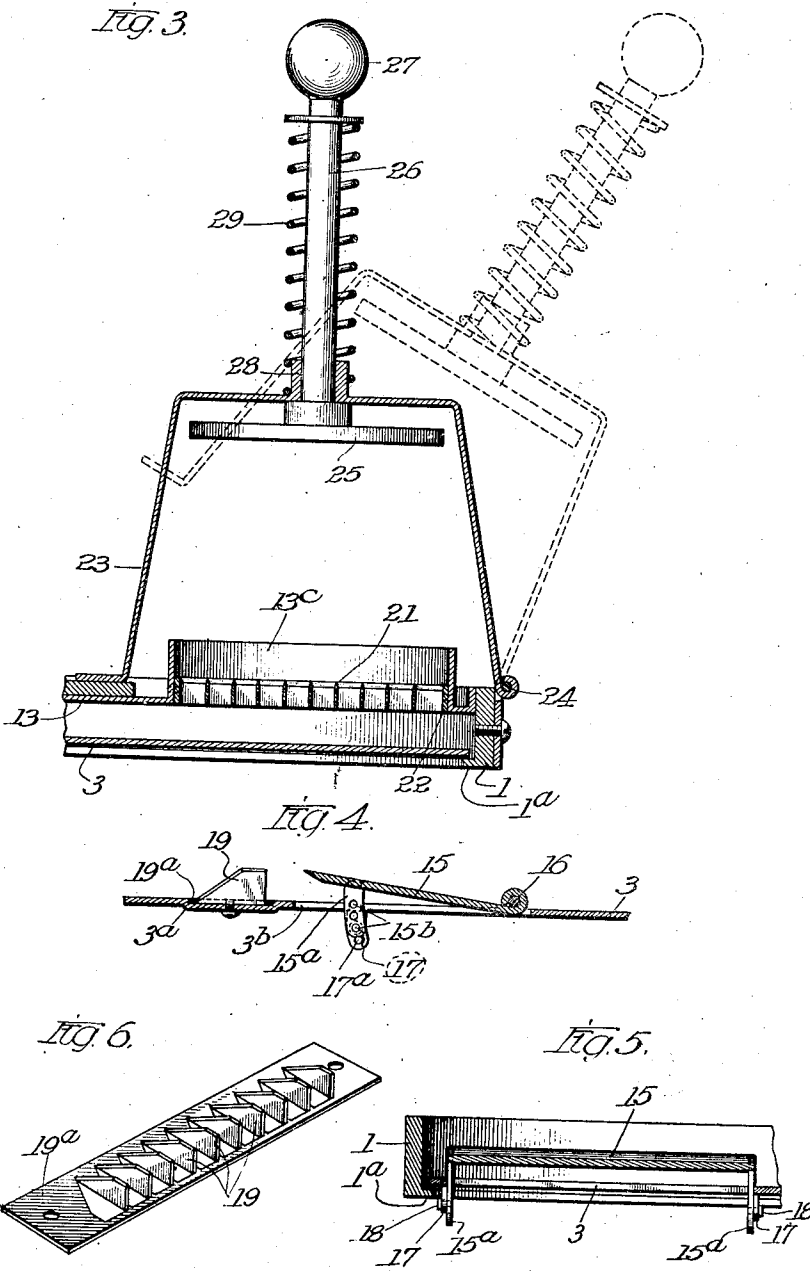
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3 SHEETS—SHEET 3.



Witnesses:  
Robert H. Weir  
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# UNITED STATES PATENT OFFICE.

JAMES K. SHIBATA, OF CHICAGO, ILLINOIS.

POTATO-CUTTER.

1,094,604.

Specification of Letters Patent.

Patented Apr. 28, 1914.

Application filed August 21, 1913. Serial No. 785,900.

To all whom it may concern:

Be it known that I, JAMES K. SHIBATA, a subject of the Emperor of Japan, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Potato-Cutters, of which the following is a specification.

My invention relates to potato cutters and the object of the invention is to provide a machine capable of cutting potatoes into pieces of the various sizes and shapes required for producing "German fried", "French fried", "Saratoga chips", "dice" and "shoe string" potatoes.

More specifically, the objects of my invention are first, to provide means for automatically feeding the potato toward the slicing knife; second, to provide means for adjusting the slicing knife to produce slices of different thickness; third, to provide means for slitting the potato into strips of different widths; fourth, to provide convenient manually operated means for feeding the potato to the slicing knife through the squaring or fashioning knives when dice are wanted.

I accomplish my objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a sectional elevation of the machine on the line 1—1, Fig. 2. Fig. 2 is a top plan of the machine. Fig. 3 is a sectional elevation of the dice cutting devices, the section being taken on the line 3—3, Fig. 2. Fig. 4 is a sectional elevation showing the slicing and slitting knives and a fraction of the rotating table whereon they are mounted. Fig. 5 is a sectional view of the slicing knife and associated parts taken on the line 5—5, Fig. 2. Fig. 6 is a perspective of the slitting knives.

Similar numerals refer to similar parts throughout the several views.

In the form of machine selected to illustrate the invention, an annular frame 1 is supported upon legs or uprights 2 of any suitable design. Frame 1 has an inwardly projecting annular flange 1<sup>a</sup> for supporting, when need be, the periphery of the rotating table 3. Table 3 is supported and driven in any suitable manner, as by the means clearly shown in Fig. 1, according to which design a table 3 is fastened to a bushing 4 which in turn is fastened by a set screw 5 or other suitable device to arbor 6 driven

by a bevel gear 7 meshing with a bevel gear 8 fastened to the main shaft 9. Shaft 9 may be rotated by hand or power, in the present instance being rotated by the hand wheel 10. It is supported in stationary bearing standards 11. The hub 7<sup>a</sup> of bevel arbor 6 is journaled. Bearing 12 is mounted upon a stationary plate 13 which is horizontal and supported in the annular frame 1 at a distance above table 3 slightly in excess of the maximum thickness of cut which the slicing knife is capable of taking.

Supported upon plate 13 is a taper hood 14 which is annular when viewed from above and is concentric with table 3 and arbor 6. By preference its outer edge is adjacent and secured to frame 1. In the present design this hood follows the marginal contour of the machine frame for something more than half its perimeter, commencing at the point 14<sup>a</sup> and terminating at the point 14<sup>b</sup> shown in Fig. 2. Hood 14 is arch-shaped, the maximum rise being at the point 14<sup>a</sup> and the minimum being at the point 14<sup>b</sup>. By preference the hood narrows slightly as it flattens out near the delivery point 14<sup>b</sup> which will be made hereinafter apparent.

Mounted upon table 3 and rotating therewith is a slicing knife 15 which is hinged at its rear edge 16 to said table, the forward cutting edge of the knife being preferably radial or approximately so. The forward cutting edge of the knife is adjustable for elevation, suitable means for the purpose being shown in Figs. 4 and 5. In this form arms 15<sup>a</sup> extend downwardly from the knife near the forward end thereof and are provided with apertures 15<sup>b</sup> which register with apertures 17<sup>a</sup> formed in arms 17. By passing the pin 18 through different apertures in parts 15 and 17, the knife edge may be held at any desired elevation and thus produce any thickness of slice desired.

At a slight distance in front of the cutting edge of knife 15 is a gang of knives 19 for slitting the potatoes into strips. By preference these knives are formed by being upstruck from a sheet 19<sup>a</sup> of steel or other suitable metal. The sheet or plate 19<sup>a</sup> fits in a recess 3<sup>a</sup> in table 3 and is bolted or otherwise removably secured thereto.

The *modus operandi* of the parts already described is as follows: The operator places the potato upon table 3 in front of the re-

ceiving end of the taper hood 14. He then rotates the hand wheel 10 and causes table 3 and the knives mounted thereon to rotate in a clockwise direction, Fig. 1. The potato will be carried along upon the rotating table until the top comes into contact with the top of the hood, whereupon the potato will be arrested but the knives, continuing their rotary movement, will slit and slice it. The device is equipped with knife gangs having the knives differently spaced, for example, if "French fried" potatoes are desired, the operator will employ a gang of slitting blades in which the blades are comparatively far apart. If, however, he wishes to produce "shoe string" potatoes, he will replace the gang by another gang in which the slitting knives are located more closely together, thus strips of any desired width may be obtained by selecting the proper set of slitting knives. As the table rotates and drives the slitting knives against the potato, the longitudinal vertical cuts will be made and after these are completed, the slicing knife 15 advancing into and through the potato will slice off a portion of the slitted potato and permit the strips to fall through a space 3<sup>b</sup> formed in the table. After the first cut has been made by the slicing knife, the potato will be lowered by the thickness of the slice and will consequently advance some distance toward the smaller lower end of the taper hood 14. The hood, however, will finally arrest the potato again and the advancing knives will repeat the action. These steps in the process will be repeated until finally the potato is completely sliced. If German fried or Saratoga chips are desired, the slitting knives 19 will be entirely removed and the knife 15 alone will be employed. The latter will be adjusted to take a thin or thick slice as desired.

I will now describe means for producing cubes: At a suitable point in plate 13, remote from the taper hood 14 is a circular opening margined by the upturned flanges 13<sup>c</sup>. Within this flange opening is mounted a grating formed of fashioning knives 21 mounted in a frame 22. These knives extend across each other at right angles and are spaced at a distance apart suitable for producing dice. Above these knives is a frame 23 hinged to the annular frame 1 upon the pin 24. A plunger 25 is secured to a plunger stem 26 provided with a handle 27 and guided vertically by a boss 28 located at the top of frame 23. A compression spring tends to yieldingly hold plunger 25 in raised position.

When it is desired to produce potato dice

the plate 19<sup>a</sup> with its slitting knives 19 is first removed. The frame 23 is then thrown back as indicated in dotted lines Fig. 3. This facilitates the introduction of a potato into the flanged opening 13<sup>c</sup>. The operator then returns frame 23 to normal position and presses down upon the handle 27. This forces the potato through the dicing knives 21 until the lower surface of the potato reaches the table 3. The slicing knife in passing under the knives 21 removes a slice from the bottom of the potato which is already cut vertical and hence the diced potato falls through the opening 3<sup>b</sup> to the receptacle provided below.

It will be seen that there is no occasion for the operator to feed the potato by hand. This is important for it eliminates the danger to the operator from being cut by the moving knives. By properly selecting the knives a potato may be cut into strips of any cross section or may be formed into cubes or dice. It will be noted that the operator has a choice of producing dice or of producing plain slices without making any change of adjustment in the machine—that is to say, if the slitting knives 19 are absent, the operator without making any adjustment can produce either dice or slices according to whether he feeds the potato through the grating or knives 21 or whether he merely feeds it into the taper hood 14.

While I have described this machine as a potato cutter, it will be obvious that it may be used for other vegetables such as beets, carrots, etc.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is:—

A vegetable cutter comprising a grating composed of two sets of fashioning knives, the knives of one set being parallel to each other and transverse to the knives of the other set, the blades of said knives being vertical and their cutting edges uppermost and their back edges substantially on a level with each other, a plunger located over said grating and moving vertically to force the vegetable down through said grating, a horizontally rotating table located beneath said grating, and a slicing knife located beneath said grating and having its cutting edge vertically adjustable toward and from the backs of said fashioning knives.

In witness whereof, I have hereunto subscribed my name in the presence of two witnesses.

JAMES K. SHIBATA.

Witnesses:

HOWARD M. COX. .  
JULIA M. BRISTOL.