March 7, 1939. F. B. PEDERSEN 2,149,981

SLICER

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Fig. 1

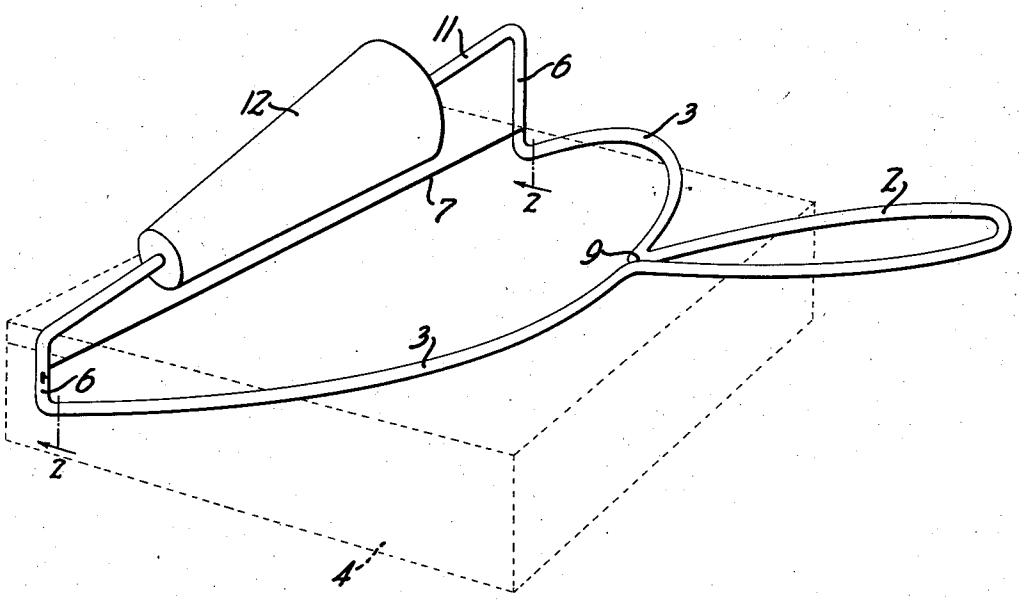
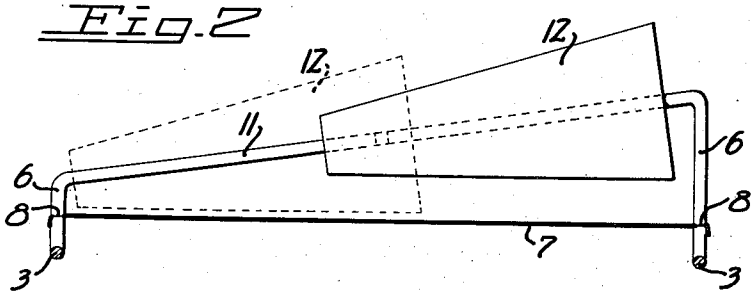


Fig. 2



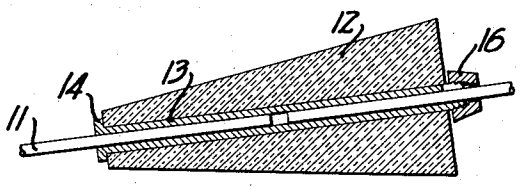


Fig. 3

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SLICER

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7 Claims. (Cl. 30—116)

My invention relates to a device for slicing materials, such as cheese or butter; and the broad object of the invention is to provide a simple, hand operated slicing instrument having an adjustment for readily controlling the thickness of slice.

The invention possesses other objects and features of advantage, some of which, with the foregoing, will be set forth in the following description of my invention. It is to be understood that I do not limit myself to this disclosure of species of my invention, as I may adopt variant embodiments thereof within the scope of the claims.

Referring to the drawing:

Figure 1 is a perspective view of a slicer embodying the improvements of my invention; a block of material being sliced is indicated by dash lines to show the operative position of the instrument; and

Figure 2 is a transverse vertical sectional view of the slicer, showing the guide roller and cutting wire in front elevation; two positions of the roller being shown to illustrate the slice adjustment. Plane of section is indicated by line 2—2 of Figure 1.

Figure 3 is a detail sectional view showing a modified form of roller mounting.

In terms of broad inclusion, the slicer embodying my invention comprises a taut wire for cutting the material to be sliced. A conical roller is provided for engaging the surface of the material to guide the cutting wire, and is journaled on an axis angularly disposed to the wire so that the line of rolling contact on the surface of the roller is parallel to the wire. Means are also provided for mounting the guide roller for adjustment along its axis, whereby shifting the roller varies the spacing between it and the wire to control the thickness of slice. In my preferred form of slicing instrument, the cutting wire and guide roller are mounted in a frame having a portion providing a handle; and the cutting wire is preferably stretched between resilient arms of the frame to hold it taut.

In greater detail, and referring to the drawing, the slicer embodying my invention preferably comprises a one-piece wire frame having a looped portion providing a handle 2, and having portions diverging from the handle to provide a pair of spreader arms 3. As shown in Figure 1, arms 3 are curved outwardly to provide clearance at the edges of a block 4 of material to be sliced, so that the frame may be positioned with arms 3 extending down alongside the block.

Handle 2 is shown extended upwardly in the plane of arms 3, but this is merely for purposes of illustration. The handle could be positioned horizontally, or in any other desired position, by changing the shape of the spreader arms. It is also understood that the handle may be a separate piece. For example, the handle could be of wood with the converging ends of arms 3 forming a tang pressed into an end of the handle. The one-piece wire frame however is simplest and least expensive, and is preferred.

At the outer ends of arms 3 the wire is bent to provide upturned portions 6 arranged to stand vertically when the instrument is slicing. At this time the arms 3 and handle 2 extend upwardly and forwardly, so that the handle is in convenient position to be grasped for pulling the instrument forwardly to effect the slicing. The cutting is done by a fine wire 7 stretched transversely across the frame and fastened adjacent the lower ends of upright portions 6. Ends of cutting wire 7 are preferably anchored to the frame by the simple expedient of providing cuts 8 into which the wire is clamped by squeezing the cut portions together.

In making this portion of my instrument one end of the cutting wire is first fastened to one of the arms, and then the wire is pulled taut against the resilience of the spreader arms until the outward spring in the arms is sufficient to keep the proper tension in the cutting wire. The other end of the wire 7 is then fastened. In order to keep the cutting wire taut, the portions of the frame at the junction between handle 2 and arms 3 are preferably brought into contact at point 9. This prevents slacking of wire 7 when the handle is squeezed during operation of the device.

From the upper ends of upright portions 6 the end sections of the wire frame are bent inwardly to provide a transverse journal 11 for a guide roller 12. The frame is designed to bring the two halves of journal 11 into alignment when wire 7 is taut; and the ends of the wire frame at the center of the journal are preferably spaced to insure contact at point 9.

Roller 12 is conical in shape, preferably a frustrum of a right circular cone; and may be of any suitable material, such as glass or condensate composition. In order to keep the line of rolling contact on the surface of the roller parallel with the cutting wire, the axis of the roller is disposed at an angle to the wire. This angle is equal to the apex angle of the roller; that is, the angle between the slant height and axis of the conical surface. One of the upright portions 6 of the

frame is made longer than the other, as best shown in Figure 2, in order to slant the roller journal 11 at the proper angle.

For purposes of controlling the thickness of slice, roller 12 is slidably mounted for adjustment along its journal 11. That is, the length of the roller is made less than the width of the frame, so that the roller may be shifted axially. By this arrangement, the spacing between the roller and cutting wire may be varied to control the thickness of slice by simply adjusting the roller along its journal. Figure 2 shows the difference in the thickness of slice for the two extreme positions of the roller.

It is found that the roller does not tend to shift along its inclined journal 11 during operation of the device. Therefore it is unnecessary to provide means for holding the roller in a selected position of adjustment. If desired however, a holding sleeve 13 may be provided as shown in Figure 3, upon which the roller is journaled. Such a sleeve has a flange 14 at one end, and is provided with a nut 16 on the other end. The latter end is split and tapered so that tightening the nut serves to clamp the sleeve on the wire 11. When it is desired to change the setting of the roller it is only necessary to loosen the nut, shift the sleeve, and then tighten the nut again in the new position.

I have found that the improved instrument will slice easily such materials as cheese, butter and soap; and that the slices made by the device are perfectly uniform in thickness for any given setting of the roller. While my device has numerous advantages, one of the principal features lies in its extreme simplicity of construction, while at the same time providing the desired slice adjustment.

I claim:

1. A slicer comprising a taut cutting wire, a conical guide roller journaled about an axis angularly disposed to said wire, and means mounting the roller for adjustment along said axis.

2. A slicer comprising a taut cutting wire, a conical guide roller journaled about an axis angularly disposed to said wire, and means mounting the roller for adjustment along said axis, the angle between said axis and wire being equal to the apex angle of the roller.

3. A slicer comprising a frame, a taut cutting wire mounted on the frame, and a conical guide roller slidably journaled on the frame about an axis angularly disposed to said wire.

4. A slicer comprising a taut cutting wire, a conical guide roller journaled about an axis extending longitudinally of the wire and so disposed that a straight line on the surface of the roller lies parallel to the wire, and means mounting the roller for adjustment along said axis, whereby shifting the roller along its axis varies the spacing between said roller and wire to control the thickness of slice.

5. A slicer comprising a frame having an extended portion providing a handle, a taut cutting wire mounted on the frame, and a conical guide roller slidably journaled on the frame about an axis angularly disposed to said wire.

6. A slicer comprising a frame having a longitudinally extending portion providing a handle, a taut cutting wire mounted transversely across the frame, and a conical guide roller slidably journaled on the frame about an axis also extending transversely of the frame and angularly disposed to said wire.

7. A slicer comprising a frame including a pair of bracket arms, a transverse journal on the frame, a cutting element connected between said bracket arms and extending longitudinally of said journal, the distance of the cutting element from the journal being greater at one end than at the other, and a conical guide roller slidably mounted for adjustment along said journal.

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