

Aug. 4, 1925.

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H. L. JOHNSTON ET AL

SLICING MACHINE

Filed Dec. 1, 1922

2 Sheets-Sheet 1

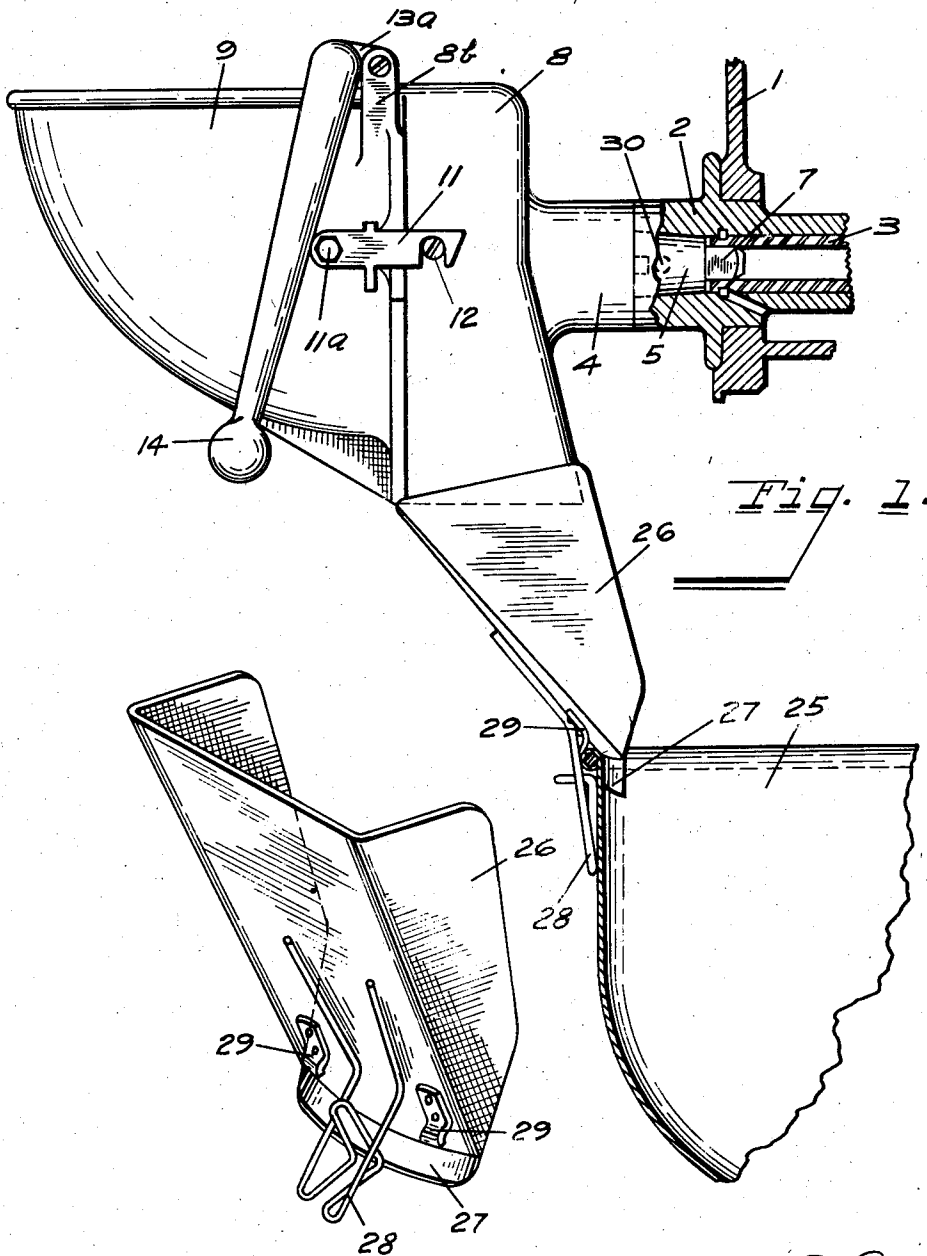


Fig. 1.

Fig. 2.

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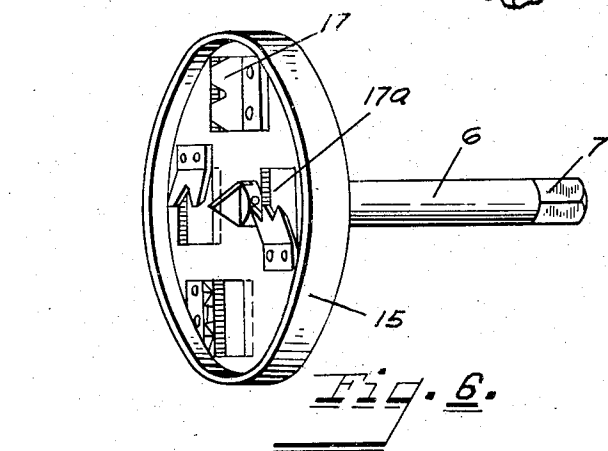
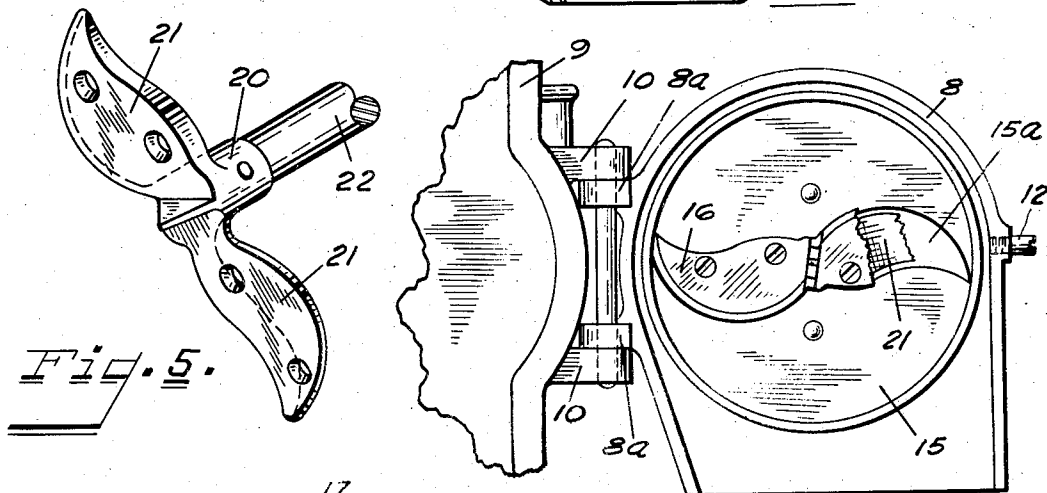
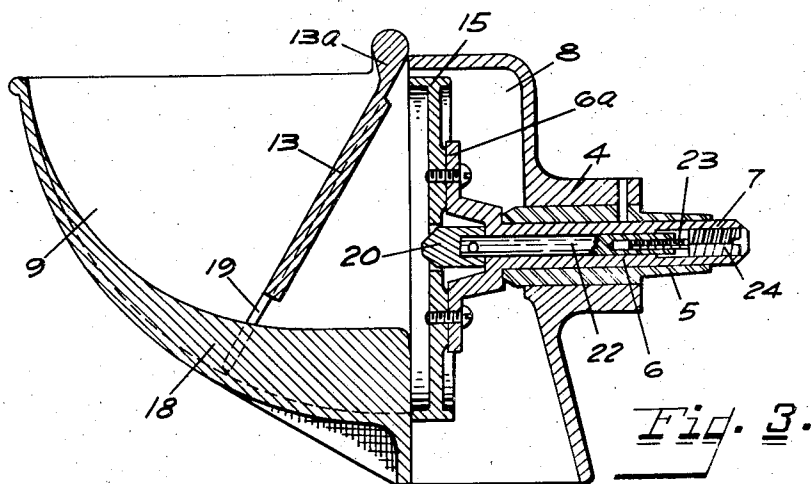
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UNITED STATES PATENT OFFICE.

HERBERT L. JOHNSTON AND THOMAS F. RATAICZAK, OF TROY, OHIO, ASSIGNORS TO
THE HOBART MANUFACTURING COMPANY, OF TROY, OHIO, A CORPORATION OF
OHIO.

SLICING MACHINE.

Application filed December 1, 1922. Serial No. 604,167.

To all whom it may concern:

Be it known that we, HERBERT L. JOHNSTON and THOMAS F. RATAICZAK, citizens of the United States, and residents of Troy, in the county of Miami and State of Ohio, have invented certain new and useful Improvements in Slicing Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

Our invention relates to slicing machines for use in slicing or shredding vegetables and the like, in the preparation of foods.

It is desirable in devices for the above purpose to arrange for easy accessibility to the various knives or slicers, so that they can be cleaned. It is our object to so arrange our device.

Another of our objects is to provide a simple and effective means of forcing the articles to be sliced or shredded against the knives, and to provide for adjustable knives to vary the action of the machine.

We also provide means whereby the feed of the vegetables or what-not, within the hopper, is such that they will not tend to travel around with the knives, our specific mechanism for this purpose being a rib or ribs in the hopper co-operating with the advancing device that forces the articles against the knives.

With our device we provide a simple and effective means for directing the sliced-up products to a mixing bowl, and we so form our slicer frame that it can be readily attached to a driving mechanism.

These objects and other advantages to be noted we accomplish by that certain construction and arrangement of parts to be hereinafter more specifically pointed out and claimed.

In the drawings,

Figure 1 is a side elevation of the complete device.

Figure 2 is a perspective view of the deflecting chute.

Figure 3 is a central vertical section of the device.

Figure 4 is an end elevation of the device with the hopper swung out of the way.

Figure 5 is a perspective view of the one form of cutting knife holder.

Figure 6 is a like view of a different form of cutter as used in shredding.

Referring to the drawings we have indicated by the broken away part 1, the frame of a driving mechanism, said frame retaining in place a hub 2, in which the slicer frame is to be set. This hub carries rotatably within it a sleeve 3 having a squared internal bore.

The frame or housing 8 of the slicer device is formed with a hub or central boss 4, which terminates in a tapered end 5. The hub 2 has a conical recess in its end into which the end 5 is thrust and finds a full engagement.

The driving shaft 6 of the slicer is in the form of a tube having a squared end 7, which engages within the sleeve 3. This sleeve 3 is driven by any desired means.

The frame of the slicer is formed with bosses 8^a at one side thereof and has a stud or screw 12 at the other side. The hopper 9 is formed so that when brought up against the frame or housing 8, it will close up the front of the said housing. At the one side of the hopper are ears 10, which are hinged to the bosses 8^a by any desired pintle. At the other side of the hopper is a latch 11, which is mounted on the hopper pivotally by means of a bolt 11^a that also serves as a stop for another portion of the machine.

The latch 11 is to be dropped over the screw 12 to hold the hopper in closed position against the face of the housing 8.

In the top of the hopper are formed suitable ears 8^b, to which are pivoted the ears 13^a on a disk 13, which acts as a follower. On the disk 13 is a handle 14 which lies on the outside of the hopper, by means of which the disk is actuated.

The disk or plate 13 is formed with a notch 19 therein to ride over a central web 18 in the base of the hopper, and the shape of the disk is such that it fits fairly closely within the hopper, so that when swung down, it will force any material within the hopper toward the housing 8 of the slicer mechanism. The disk swings clear out of the hopper to permit charging thereof.

Reverting to the slicer mechanism it will be noted that the hollow shaft 6 is expanded into a mounting base 6^a, to which is mounted a disk 15.

This disk may be equipped directly with shredding knives 17, while for slicing knives we prefer to provide an adjustable arrangement, thereby permitting a grading of the

cut performed thereby. Each knife 17 lies over an opening 17^a in the disk.

For the slicing knives we provide a spindle 22, which passes through the hollow shaft 6 and at its outer end is internally threaded to engage the threads of a screw 23. This screw has also a head or enlarged portion 24, which engages in threads of greater pitch cut into the hollow shaft at its squared outer end.

The turning of the screw will thus change the position of the spindle 22 in the driving shaft 6.

The disk 15 is formed with apertures 15^a therein of a shape to receive the knife blades 16. These blades in the instance shown are of curved formation (Fig. 4) and secured on the spindle 22 by a holder hub 20, which has wings 21 on which the blades are mounted.

By adjusting the terminal screw, the position of the knife edges away from the depressions in the disk 15 can be adjusted and thus the amount of cut performed by the knives.

When it is desired to direct the sliced material into a mixing bowl, as when the mechanism is mounted in connection with the frame of a mixer, we provide a chute device for conveying the said material acted upon to the bowl.

Thus in Figure 1 we have shown a mixing bowl 25 and a chute 26, said chute having a base and sides, which sides fit the sides of the housing 8, said housing being open at its lower end.

The base of the chute is formed with a flange 27 shaped to engage on the inside of the rim of the bowl and also has clips 29 to engage at the same time over the bead at the rim of the bowl. We also mount on the under side of the chute base a spring device having a turned-up end 28, which engages on the outside of the bowl beneath the bead. These three devices in connection with the chute act to hold it firmly in place on the rim of the bowl.

In operation the conical end of the housing 8 of the slicer is inserted into the bore formed for it in the casing hub and a pin or screw 30 inserted into the two parts to hold them together.

The hopper is swung into closed position and the disk 13 lifted out of the way to permit charging of the hopper. The power is then coupled up to the shaft 3 and the handle on the disk 13 is used to force the material in the hopper toward the knives. This motion is limited by the handle 14 coming up against the bolt 11^a.

The sliced material will then feed out of the bottom of the housing, passing through the holes in the disk 15, which underlie the knives.

The combined action of the plate or disk 13 and the central web in the hopper base is to prevent the vegetables or other material from milling about in the hopper, and acts to hold the material steadily against the knives. The device operates very rapidly and efficiently, and by swinging away the hopper, the entire knife device becomes immediately available for cleaning.

We find that the cutting edges of the adjustable knives operate efficiently when formed in an arc, as shown.

By describing in detail the various parts of a preferred form of mechanism we do not wish to be construed as thereby limiting the scope of our invention to those details selected. It should be understood that the parts described are essentially exemplary of the various points of our invention, as expressed in the claims that follow.

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

1. A hopper for slicing machines and the like, comprising a casing adapted to be charged from above and to deliver material charged laterally to the mechanism for acting on the said material, and a rib formed to extend well above the base of the casing at the delivery end thereof, adapted to prevent rotation of the material within the casing, and a plate hingedly connected to the hopper and adapted to swing through an arc within the same, said plate being cut away to clear said rib.

2. A hopper for slicing machines and the like, comprising a casing adapted to be charged from above and to deliver material charged laterally to the mechanism for acting on said material, and a follower within the housing comprising a plate hingedly connected thereto, and shaped to swing through an arc within the hopper casing, and a handle for said plate to operate the same, said plate being adapted to be swung, thereby entirely out of the casing, and a stop for the handle to prevent the movement of the plate further into the casing than desired.

3. In a slicing machine, a slicing mechanism comprising a disk or plate, a hollow driving shaft for the plate, slicing knives, a spindle on which they are mounted, and means for adjustably retaining the spindle within the driving shaft, whereby the position of the knives with relation to the plate may be regulated, said adjustable retaining means comprising a screw adapted to engage within the spindle end and the shaft, and having different pitch threads for engagement with said spindle and hollow shaft.

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