July 12, 1938. H. W. BARNES 2,123,396

SLICING MACHINE

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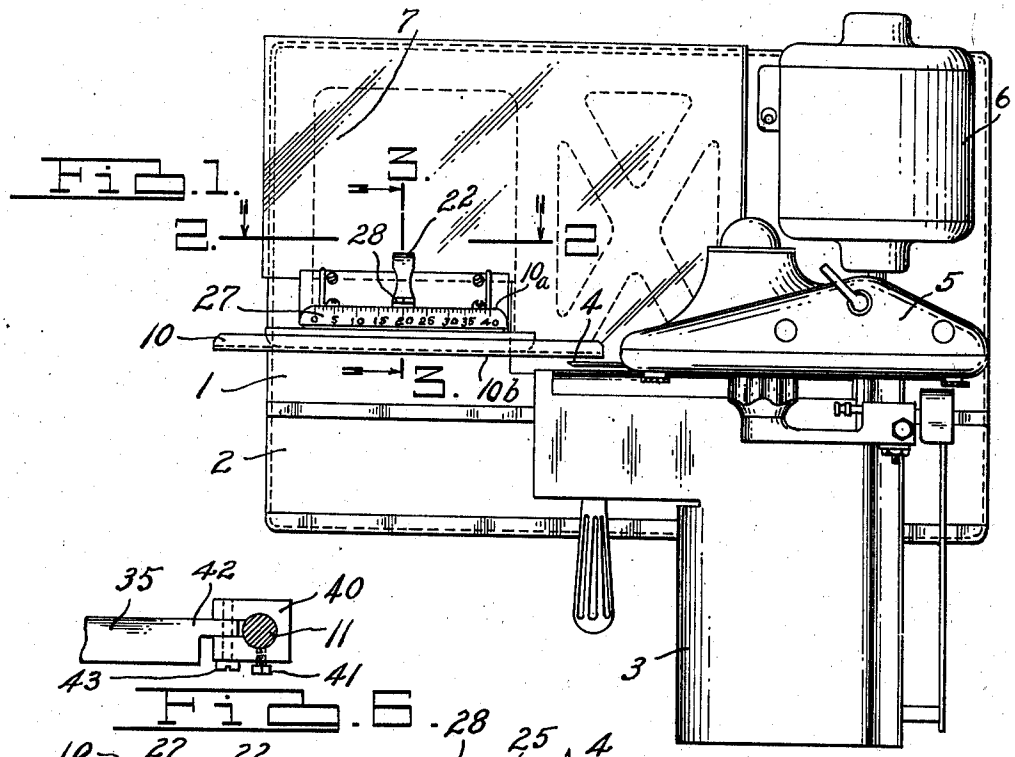

Fig. 1.

Fig. 6.

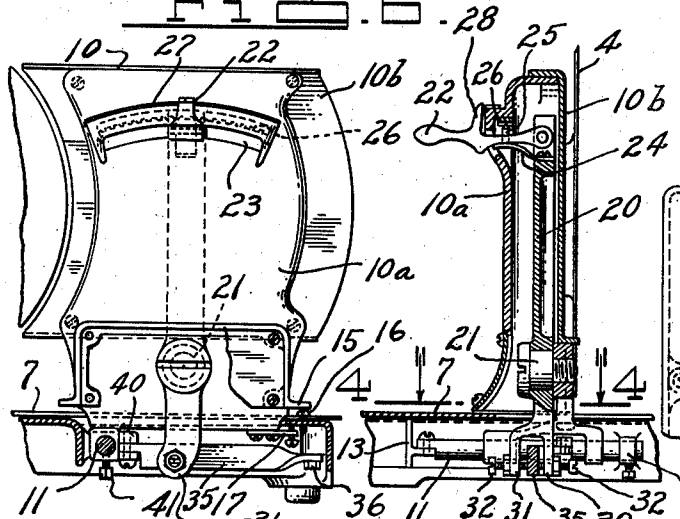

Fig. 2. Fig. 3.

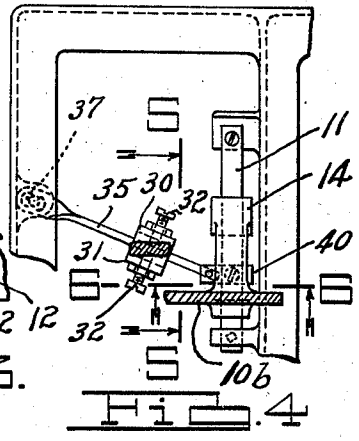

Fig. 4.

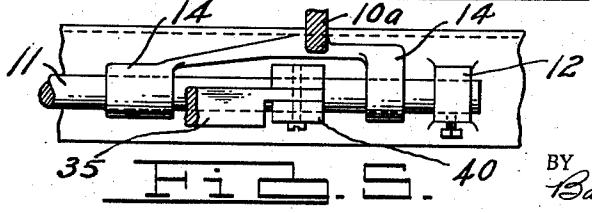

Fig. 5.

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SLICING MACHINE

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2 Claims. (Cl. 146—102)

This invention relates to a slicing machine, and it has to do particularly with a slicing machine of the so-called gauge plate type.

Slicing machines of this type usually embody a rotary disc knife with a reciprocable carrier movable across the edge of the knife substantially parallel to the knife for carrying the material to be sliced. A gauge plate is located adjacent the cutting edge of the knife and adjustable axially thereof from a plane substantially that of the cutting edge of the knife into planes removed therefrom on the opposite side of the knife from the carrier. The position of the gauge plate determines the thickness of the slice.

The present invention is directed particularly to the provision of a gauge plate adjusting structure. It is an object of the invention to provide a simple, rugged, accurate gauge plate adjusting structure by means of which the gauge plate may be quickly and accurately adjusted and which adjusting structure occupies only a small horizontal space to the rear of the gauge plate, thus offering substantially no interference with the slice-receiving tray. Thus a relatively large area of the slice-receiving tray is exposed, the space not being utilized for accommodating the adjusting mechanism.

In the accompanying drawing:

Fig. 1 is a plan view of a slicing machine embodying the invention.

Fig. 2 is a sectional view taken substantially on line 2—2 of Fig. 1 illustrating some of the adjusting structure.

Fig. 3 is a sectional view taken substantially on line 3—3 of Fig. 1.

Fig. 4 is a sectional view taken substantially on line 4—4 of Fig. 3.

Fig. 5 is a detail view in section taken substantially on line 5—5 of Fig. 4.

Fig. 6 is a detail sectional view taken substantially on line 6—6 of Fig. 4.

The slicing machine comprises a base 1 with a track 2 upon which a carrier 3 is mounted to reciprocate from left to right as Fig. 1 is viewed. The edge of a disc knife is shown at 4 mostly confined in a housing 5 and driven by a motor 6. On the opposite side of the knife from the carrier, is a tray 7 preferably removably located on the base, and the base may be of cut-out or of skeleton structure as illustrated by the dotted lines of Fig. 1.

The gauge plate is illustrated generally as at 10, the same being shiftable relative to the plane of the knife. For this purpose a guide rod 11 may be mounted on the under side of the base, as shown in Figs. 2 and 3 and carried by brackets 12 and 13. The gauge plate structure may comprise a casting of hollow form as illustrated at 10*a* with a face plate 10*b*. The body 10*a* has a lower portion with apertured members 14 slidably mounted upon the rod 11. The base of the machine is open so that the gauge plate may extend therethrough as shown in Fig. 3, and the opposite side of the portion 10*a*, that is opposite the supporting members 14, is provided with a projection 15 which may ride upon a suitable support 16. The gauge plate may be held in position by a part arranged to engage the base from below, as for example by means of an adjusting screw located in the bracket 17.

The adjusting mechanism preferably takes the form of a lever housed by the parts 10*a* and 10*b*. This lever is indicated at 20 and is journaled in the lower portion of the casting 10*a* on a stud 21. Preferably this journal is fairly large, both in diameter and in axial extent, as shown, to prevent cocking of the lever. An operating handle 22 is pivoted to the upper end of the lever and extends out through a slot 23. This operating handle is spring pressed upwardly by a leaf spring 24, and it has a detent 25 operating on an inverted notched segment 26. The spring holds the detent in any one of the notches. A scale or indicating device 27 may be placed on a horizontal portion of the casting 10*a* as indicated, and the lever may be equipped with a projecting arm 28 which constitutes a pointer cooperating with the scale.

Thus it will be observed that the lever may be locked substantially in the plane of the gauge plate by depressing the handle 22 and applying torque to the lever through the handle, and upon release of the handle spring 24 urges the detent into one of the notches of the segment, thus maintaining adjustment. This movement of the lever is designed, through certain other structure, to cause a shift of the gauge plate in a direction substantially perpendicular to the direction of rocking of the lever.

To this end the lower end of the lever is bifurcated, thus having opposed spaced arms 30 and 31, each of which may carry suitable bearing members, preferably adjustable and here shown as in the form of set screws 32. An inclined plane device is employed for causing movement of the gauge plate, and this may take the form of a hardened steel member 35. The body of the member stands vertically while one end may be turned into a horizontal position and held by a cap screw 36 to the base of the machine through the means of an elongated slot 37. The oppo-

site end is suitably supported, for which purpose it may be attached to the guide rod 11 through the means of a bracket 40 secured to the guide rod by a set screw 41, the bracket being bifurcated to receive a reduced end 42 of the inclined plane member and held by a screw 43. The bearing members 32 snugly engage the inclined member 35, as shown in Fig. 3.

Now when the lever is shifted on its pivot, bearing members 32 shift in an arc on the inclined plane member 35. Inasmuch as the lever is rigidly mounted from the standpoint that it is not shiftable relative to the gauge plate, except for the rocking action on its fulcrum, shifting of the lever causes the lever and the gauge plate to shift bodily relative to the plane of the knife and along the guide member 11. Rocking of the lever in one direction causes the gauge plate to back away from the knife; rocking of the lever in the opposite direction causes the gauge plate to move toward the plane of the knife. The position of the gauge plate determines the slice thickness. As the carriage moves into alignment with the gauge plate, the article thereon to be sliced is urged into contact with the face member 10*b*, and as the carriage moves to the right the article is sliced and the thickness of the slice is governed by the adjustment of the gauge plate.

It will be noted that the inclined plane member 35 is adjustable. This is done by loosening the cap screw 36 and set screw 41 and shifting of the bracket 40 lengthwise and rod 11. In this action the member 35 moves relative to the cap screw 36 due to the elongated slot 37. When the proper adjustment has been attained the set screw and cap screw are tightened. This adjustment, however, is preferably a factory adjustment or an adjustment to be made only by proper service experts. The force for shifting the gauge plate is communicated thereto through the lower portion of the lever and the fulcrum stud 21. It is for this reason that the fulcrum is made of generous proportions, thus to prevent cocking of the lever on the stud and thus obtaining an accurate adjustment. The notched segment and the scale are preferably made so that the teeth of the segment correspond to the markings along the scale, and these can be made as small or fine as desired, it not being the intention to limit the proportions to that shown in the drawing.

I claim:

1. In a slicing machine having a rotary disc knife, a reciprocable carriage for material to be sliced, and an adjustable gauge plate for determining sliced thickness, a base upon which the knife, carriage and gauge plate are mounted; a controlling lever, fulcrum means carried by the gauge plate above the base and in close proximity thereto, said lever being disposed in an upright position, means on the upper end of the lever for shifting the same on its fulcrum, an inclined member mounted on the base underneath the upper surface thereof disposed at an angle to the plane of the gauge plate, the lower end of the lever being bifurcated with the inclined member disposed between the bifurcated parts, and adjustable contact devices carried by the lever and engaging opposite sides of the inclined member.

2. In a slicing machine, a rotary disc knife, a base, a carriage reciprocable past the edge of the knife for carrying material to be sliced, means providing a surface on the opposite side of the knife from the carriage for receiving sliced material, a gauge plate positioned between the path of movement of the carriage and the surface providing means for determining slice thickness, said gauge plate comprising a face plate and a body member secured together against relative movement and forming a hollow gauge plate structure, means positioned below the upper surface of the base upon which the gauge plate is slidably mounted for movement substantially at right angles to the movement of the carriage, a fixed member underneath the upper surface of the base member and which is inclined relative to the direction of movement of the gauge plate, a lever disposed within the hollow gauge plate structure and pivotally mounted to the body portion thereof, said lever having an arm projecting below the upper surface of the base and slidably associated with said inclined member, the other arm of the lever extending upwardly into the hollow gauge plate structure, and means connected to the upper end of the lever and extending out through the body member of the gauge plate by means of which the lever may be locked to slidably adjust the face plate and body member of the gauge plate in unison with the lever moving therewith.

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