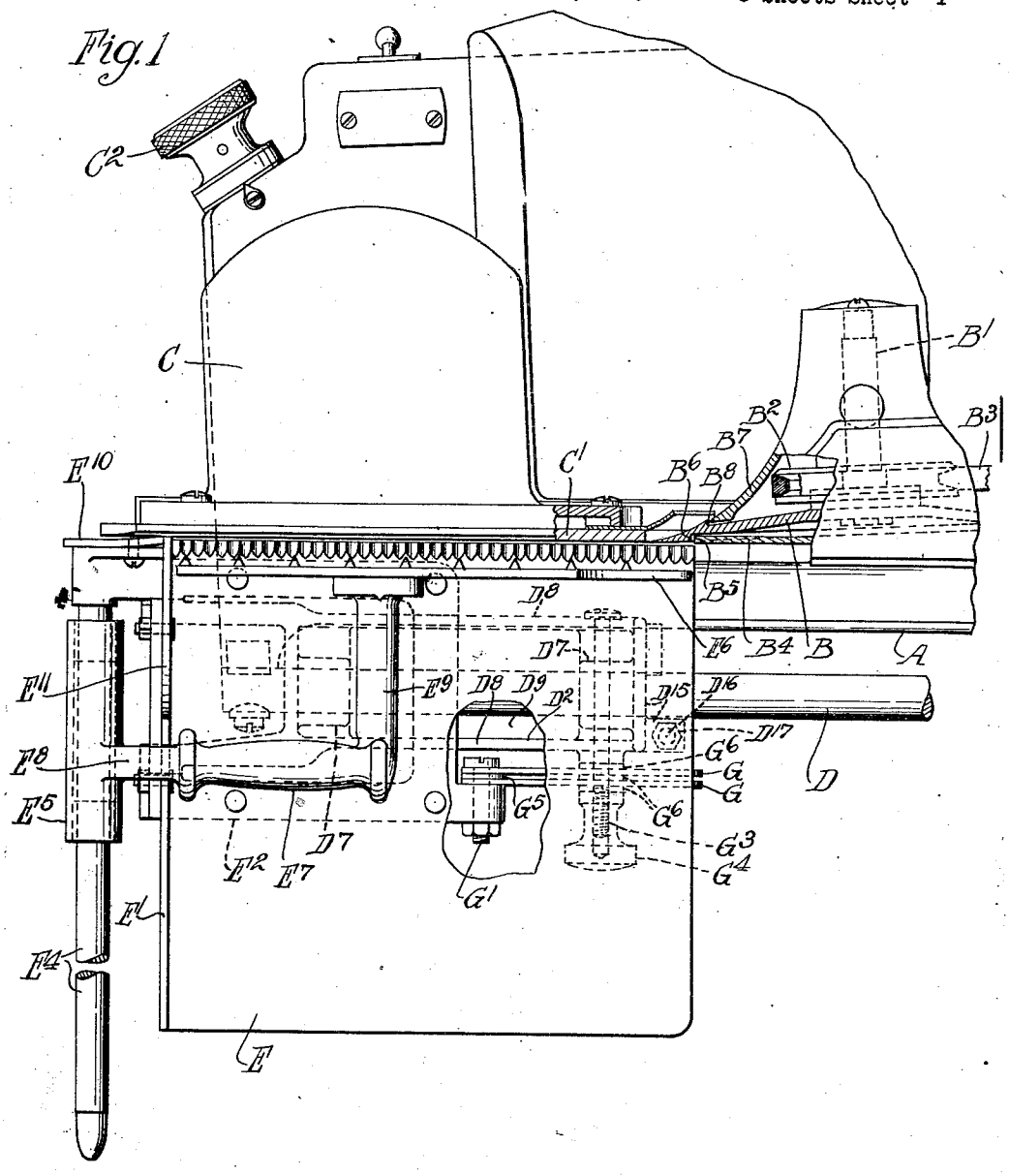
Dec. 8, 1931. W. J. CAMPBELL 1,835,276

WORK SUPPORT FOR SLICING MACHINES

Filed June 8, 1929 3 Sheets-Sheet 1

Fig. 1



Inventor
William J. Campbell
by Parker & Carter
Attorneys.

Dec. 8, 1931. W. J. CAMPBELL 1,835,276

WORK SUPPORT FOR SLICING MACHINES

Filed June 8, 1929 3 Sheets-Sheet 2

Fig. 2

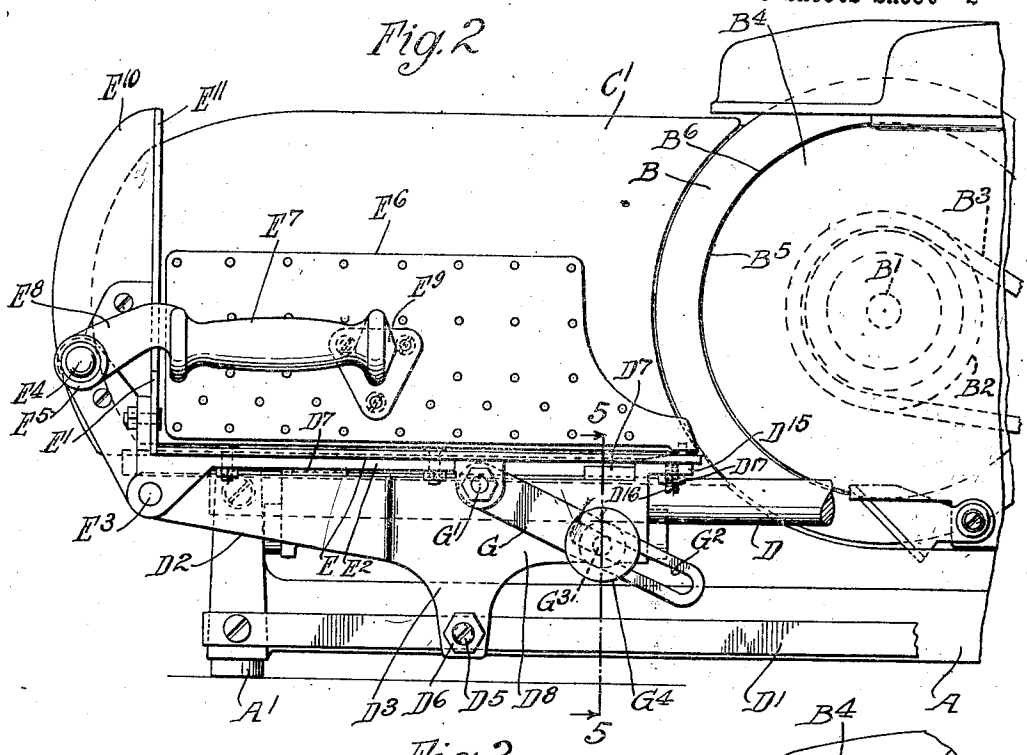
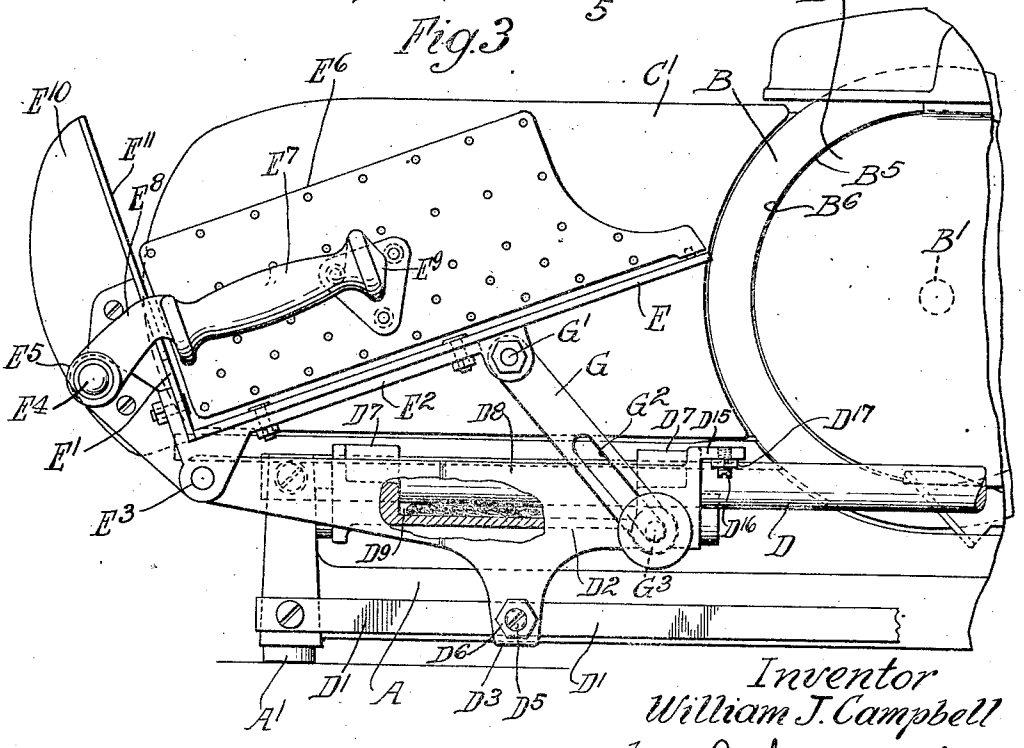


Fig. 3



Inventor
William J. Campbell
by Parker & Carter
Attorneys.

Dec. 8, 1931. W. J. CAMPBELL 1,835,276

WORK SUPPORT FOR SLICING MACHINES

Filed June 8, 1929 3 Sheets-Sheet 3

Fig. 4

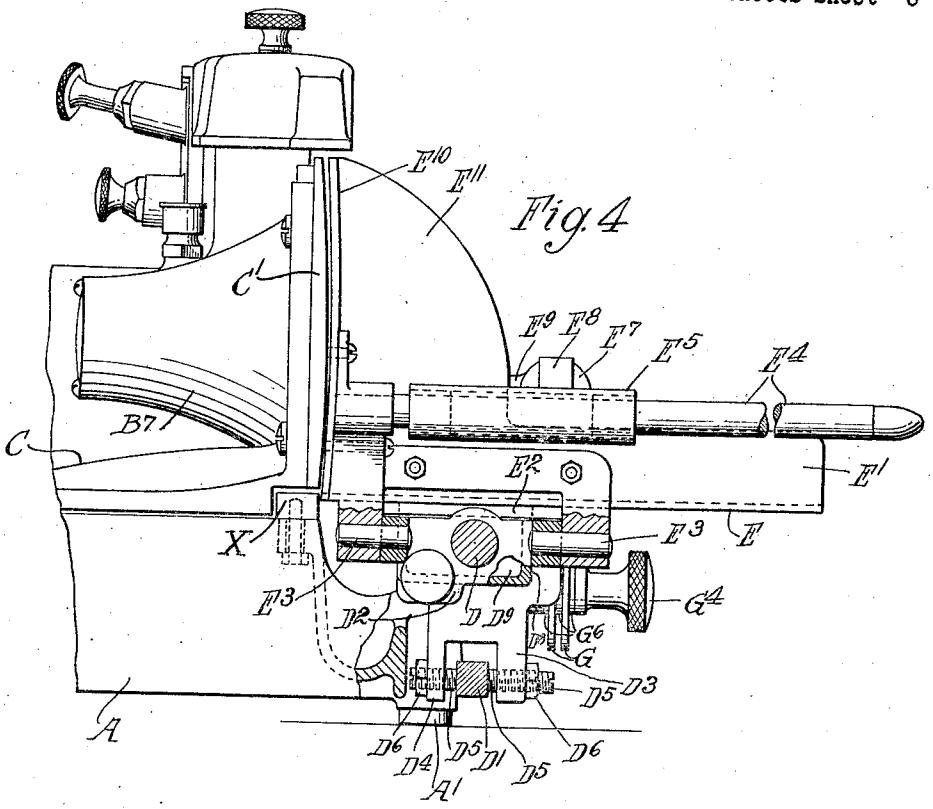
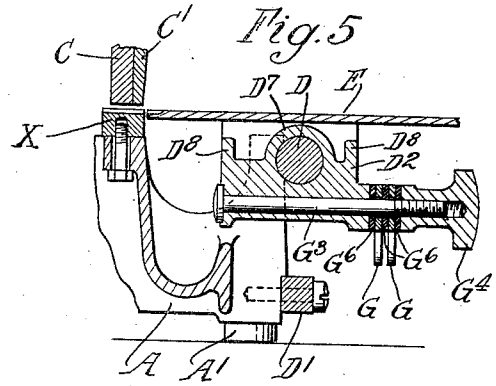


Fig. 5



Inventor
William J. Campbell
by Parker & Carter
Attorneys.

Patented Dec. 8, 1931 1,835,276

UNITED STATES PATENT OFFICE

WILLIAM J. CAMPBELL, OF INDIANAPOLIS, INDIANA, ASSIGNOR TO AMERICAN SLICING MACHINE COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF NEW YORK

WORK SUPPORT FOR SLICING MACHINES

Application filed June 8, 1929. Serial No. 369,447.

My invention relates to a slicing machine of the type wherein a circular knife is employed, herein shown as motor driven. One object of the invention is to provide an adjustable work support or carriage and in particular to provide such a carriage or support with means whereby the angle of the supporting surface may be adjusted through a considerable arc from the horizontal. Another object is the provision of means for permitting such angular adjustment to be employed in connection with an outwardly bowed gauge plate for the work being sliced. Another object is the provision of improved means for locking or holding the meat support at various positions of adjustment. Other objects will apepar from time to time in the course of the specification and claims.

I illustrate my invention more or less diagrammatically in the accompanying drawings, wherein—

Figure 1 is a plan view;

Figure 2 is a front elevation;

Figure 3 is an elevation similar to Figure 2 with the work support in a different position;

Figure 4 is an end elevation, with parts in section; and

Figure 5 is a section on the line 5—5 of Figure 2.

Like parts are indicated by like characters throughout the specification and drawings.

A generally indicates a base or support for a slicing machine and A^1 ground engaging members or pads.

Mounted on the base A is a circular knife B with its knife shaft B^1 and pulley B^2 associated therewith. B^3 indicates a belt extending to any suitable power source, for example an electric motor, not herein shown.

It will be observed that the axis of the shaft B^1 lies in a generally horizontal plane but is tilted somewhat out of perpendicularity to the path of movement of the carriage later to be described. B^4 indicates a guard plate positioned in front of the knife B and including an arcuate edge B^5 penetrating the recess B^6 in front of the knife. B^7 indicates a generally bell shaped guard portion the edge of which penetrates the recess B^8 at the rear of the knife.

C generally indicates a supporting structure upon which is mounted the gauge plate C^1. C^2 indicates any suitable control knob in response to the rotation of which the gauge plate C^1 and its support C are moved toward and away from the cutting plane of the knife B.

The contour of the cutting arc of the knife is somewhat bowed forward, owing to the tilting of the axis of the shaft B^1 and faces of gauge and guard plates are bowed to correspond, as shown for example in Figure 4. This bowing is necessary or at least preferable, in order that the space between the cutting edge of the knife and the adjacent edge of the gauge plate C^1 may be uniform from top to bottom of the cutting arc, so that the slices may be of even thickness throughout.

D generally indicates a track, herein shown as cylindrical in cross section, which may be mounted in any suitable manner upon the base A of the machine. Positioned adjacent the track D, herein shown as aligned below it, is the rectangular guide track D^1. Slidably mounted on the track D is the carriage structure generally indicated as D^2. The track D^1 serves to prevent the rotation of the carriage about the track D and in order to effect this guiding control I provide the opposed flanges D^3 D^4 on opposite sides of the track D^1. I may employ any suitable means for example the adjusting screws D^5 D^5 with the lock nuts D^6 D^6 whereby a limited rotation of the carriage D^2 about the track D may be effected, for adjustment purposes. The carriage itself may include terminal bearing sleeves D^7 D^7 connected for example by the walls D^8. The intermediate hollow portion D^9 of the carriage may be filled with any suitable packing means, for example a fibrous mat, which may serve to receive a lubricant, whereby the bearings are constantly lubricated. If desired the top of the carriage may be closed in order to prevent escape of the lubricant or penetration of dirt particles into the central space of the carriage.

Mounted upon the carriage is the work support proper which may include a flat bottom plate E the side flange E^1, and transvserse holding members E^2. These holding mem-

bers may be hinged as at E^3 to the carriage proper, whereby the work supporting member may be rotated about the pivot E^3. E^4 indicates a compound handle and guiding pin upon which is slidable the sleeve E^5 to which is secured the pusher plate E^6 as by the handle E^7 which is connected by the member E^8 with the sleeve E^5 and by the member E^9 with the pusher plate. The member E^8 is formed to clear the top of the flange E^1. E^{10} is the guard member adapted to cover the cutting edge of the knife when the carriage is at the termination of the cutting stroke and E^{11}. is a supplemental guard associated therewith lying in a plane generally perpendicular thereto.

In order to control the location of the member E, I provide a plurality of links G which may be pivoted as at G^1 upon the member E^2, which carries the plate E. These links are slotted as at G^2 and through the slots may pass the pin G^3 one end of which is secured in the carriage and the other of which is provided with a locking knob G^4. G^5 indicates a washer upon the pivot G^1 spacing apart the links G. Aligned on the pin G^3 between and about the links G are a plurality of washers G^6 which may be of any suitable frictional material, for example fiber. It will be understood that when the member E has been set at the desired angle, as shown for example in Figure 3, the knob G^4 is rotated in locking position, clamping the slotted portions G^2 of the links G. Each link is engaged on each side by one of the frictional washers G^6 and the result is a firm locking of the device in supporting position, which will resist even relatively heavy weights, such as the weight of a large piece of meat.

When the member E is in the horizontal position as illustrated in Figure 2, it normally rests upon a limit stop or flange D^{15}. However I may provide for any suitable adjusting means, herein illustrated as by the set screw D^{16} and lock nut D^{17}, whereby the work supporting plate E may be accurately adjusted in its horizontal position.

Owing to the fact that the gauge and guard plates are outwardly bowed, as above described it is necessary that some provision be made for permitting the edge of the member E to clear the faces of guard and gauge plates when it is rotated into upwardly inclined position, as in Figure 3. Assuming that the edge of the member E closely approaches the lower edge of the gauge plate C^1, any upward movement of the member E will tend to bring it into contact with the outwardly bowed face of the gauge plate. In order to permit this upward rotation to take place without such contact I may incline the axis of rotation of the member E. Referring for example to Figure 4 I illustrate the pivot members E^3, which may be considered a single pivot or axis, as downwardly and outwardly inclined away from the cutting plane of the knife. The result is that as the member E is upwardly tilted there is a slight lateral movement of its edge away from the cutting plane. The face and edges of the guard members E^{10} E^{11} are of course bowed, as shown in Figure 4 and sufficient excess space is given to permit them to clear the face of the gauge plate as they are rotated. As shown in Figure 4 the pivots E^3 are somewhat inclined downwardly and outwardly in relation to the gauge plate. This effect may be obtained either by having the pivots inclined in relation to the carriage or by slightly inclining the carriage. In Figure 4 both methods are indicated, and in any case in which it shall be undesirable to incline the axes E^3, or in which they shall inadvertently have been insufficiently inclined, the members D^5 may be adjusted to obtain the desired inclination of the axes E^3, and to permit the member E to clear the bowed face of the gauge plate or guard plate when it is upwardly inclined as in Figure 3.

It will be realized that whereas I have described and shown a practical and operative device, nevertheless many changes might be made in the size, shape, number and disposition of parts without departing from the spirit of my invention. I therefore wish my description and drawings to be taken as in a broad sense illustrative and diagrammatic rather than as limiting me to my specific showing.

The use and operation of my invention are as follows:

In the type of slicing machine herein described I find it desirable to employ a work supporting member, such as the plate with its attendant abutment flange E^1, which may be positioned at the will of an operator in either horizontal position or in inclined position. When an operator is slicing large articles, such as bacons and loaves of bread, and is slicing them with the bacon or loaf in horizontal position on the carriage, the horizontal positioning of the member E gives ample room for a large loaf or bacon. In slicing smaller articles or articles of circular cross section, such as sausage, the member E may be tilted into the position in which it is shown in Figure 3, in order to hold the article, such as a sausage, positioned by gravity against the abutment flange E^1. In order to provide firm means for locking the member E in position I employ a plurality of slotted links, with gripping frictional washers. These washers enlarge the clamping space, by duplication, and may add to the clamping effect by increased friction resistance, if fiber is employed. Under some circumstances metal washers may be satisfactory but where increased support is necessary, fiber or any other suitable frictional substance may be employed.

With the employment of bowed gauge and guard plates, necessitated by the above described inclination of the axis of the knife, it is necessary to compensate for the bowing to permit the upward tilting of the member E. I may effect the compensation in several ways and I indicate the two methods, which may be embodied in the same machine, the angular adjustment of the carriage D^2 about the track D, and the inclination of the axes E^3 from the horizontal. The axes E^3 may be inclined to the carriage, or the carriage itself may be adjusted by means of the members D^5, or both methods may be employed.

Note that the point of support of the carriage D^2 on the track D is positioned adjacent the center of mass of the carriage. One important result of this balanced support is the substantial elimination of any substantial lateral thrust against the adjusting screws D^5 D^5. The result is a very smooth movement of the carriage along the track, a maximum ease in thrust which is particularly important as permitting easy and rapid movement of the carriage.

Note further that the width of the work supporting member E is substantially equal to the length of the actual cutting excursion. In other words in reciprocating the carriage back and forth across the face of the knife, and considering the use of the device when slicing large pieces, substantially the entire reciprocation is a cutting movement and there is a minimum waste of energy.

Referring for example to Figure 2 it will be seen that the center of the pivot pin E^3 is slightly to the left of the flange E^{11}. The center of the pivot is so placed in order to make sure that the edge of the meat support or horizontal plate adjacent the pivot E^3 will never drop below the top of the slice supporting shelf X when the plate is tilted up. The function of the shelf X is to support the edge or forward portion of the work adjacent the gauge plate, at all adjustments of the gauge plate C^1, and it is important that at no position of the member E should the work, or any part of it, drop to a level below the upper level of the member X. It will also be seen, for example in Figure 4, that I may employ a pair of pivot pins E^3 which lie in the generally horizontal plane of the track D. This effects a saving in space and permits a sufficient separation of the tracks D and D^1 without increasing the height of the base or requiring an increase in the height of the carriage itself.

I claim:

1. In a slicing machine having a knife and means for actuating it and a carriage movable across the face of said knife, a work support pivoted upon said carriage for rotation about an axis at right angles to the path of movement of said carriage, said axis being inclined downwardly and outwardly away from the cutting plane of the knife.

2. In combination with a slicing machine having a knife and means for actuating it, an outwardly bowed gauge plate and a carriage movable across the face of said gauge plate, a work support pivoted upon said carriage for rotation about an axis at right angles to the path of movement of said carriage, said axis being inclined downwardly and outwardly away from the cutting plane of the knife sufficiently to permit the edge of the work support to clear the bowed portion of the gauge plate when the work support is upwardly tilted.

3. In a slicing machine having a knife and means for actuating it and a carriage movable across the face of said knife, a work support pivoted upon said carriage for rotation about an axis at right angles to the path of movement of said carriage, said axis being normally downwardly and outwardly inclined away from the cutting plane of the knife, and means for varying or adjusting the inclination of said axis.

4. In combination with a slicing machine having a knife and means for actuating it, an outwardly bowed gauge plate and a carriage movable across the face of said gauge plate, a work support pivoted upon said carriage for rotation about an axis at right angles to the path of movement of said carriage, said axis being normally downwardly and outwardly inclined from the cutting plane of the knife sufficiently to permit the edge of the work support to clear the bowed portion of the gauge plate when the work support is upwardly tilted and means for varying or adjusting the inclination of said axis.

5. In a slicing machine having a knife and means for actuating it and a carriage movable across the face of said knife, a guiding and supporting track along which said carriage is movable, said track being aligned with the center of weight of said carriage.

6. In a slicing machine having a knife and means for actuating it and a carriage movable across the face of said knife, a guiding and supporting track along which said carriage is movable, said track being aligned with the center of weight of said carriage, and an additional guide track vertically aligned with said first mentioned track.

7. In a slicing machine having a knife and means for actuating it and a carriage movable across the face of said knife, a guiding and supporting track along which said carriage is movable, said track being aligned with the center of weight of said carriage, said track being circular in cross-section, and an additional guide track in operative engagement with said carriage, adapted to hold said carriage against rotation about said first mentioned track.

8. In a slicing machine having a knife and means for actuating it and a carriage movable across the face of said knife, a work support pivoted upon said carriage for rotation about an axis at right angles to the path of movement of said carriage, said axis being inclined downwardly and outwardly away from the cutting plane of the knife, and means for adjusting the inclination of said axis.

9. In combination with a slicing machine having a knife and means for actuating it, an outwardly bowed gauge plate and a carriage movable across the face of said gauge plate, a work support pivoted upon said carriage for rotation about an axis at right angles to the patn of movement of said carriage, and means for adjusting said axis to permit the edge of the work support to clear the bowed portion of the gauge plate when the work support is upwardly tilted.

10. In a slicing machine having a knife and means for actuating it and a carriage movable across the face of said knife, a supporting track upon which said carriage is slidably mounted, a work support pivoted upon said carriage for rotation in relation to said carriage, the axis of rotation of said work support lying in the horizontal plane of the track upon which the carriage moves.

11. In a slicing machine having a knife and means for actuating it and a carriage movable across the face of said knife, a supporting track upon which said carriage is slidably mounted, a work support pivoted upon said carriage for rotation in relation to said carriage, about an axis at right angles to the path of movement of the carriage, said axis of rotation lying in the horizontal plane of the track upon which the carriage moves, there being a separate pivot connection at each side of said track.

Signed at Indianapolis, county of Marion and State of Indiana, this 5th day of June 1929.

WILLIAM J. CAMPBELL.