

Sept. 29, 1936.

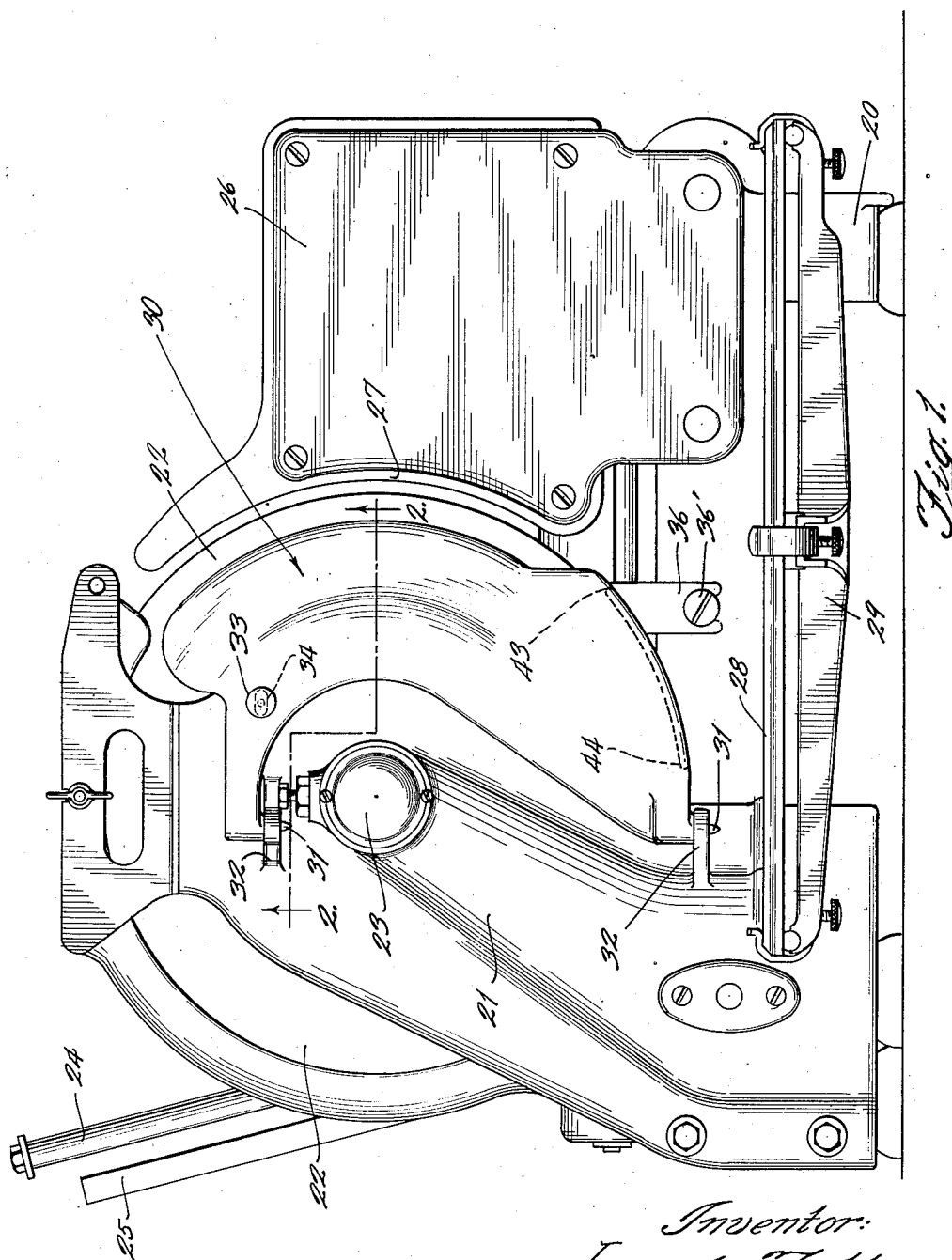
J. FOLK

2,055,817

DEFLECTOR FOR SLICING MACHINES

Filed Oct. 14, 1932

4 Sheets-Sheet 1



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4 Sheets-Sheet 2

Fig. 2.

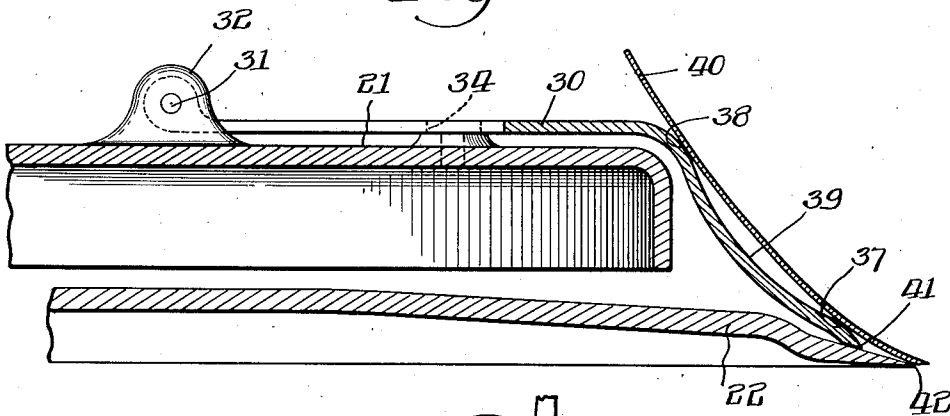
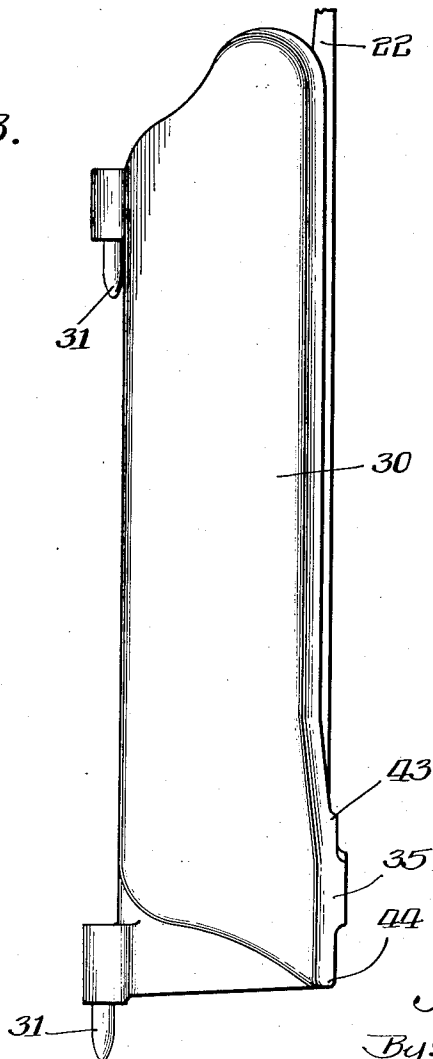


Fig. 3.



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4 Sheets-Sheet 3

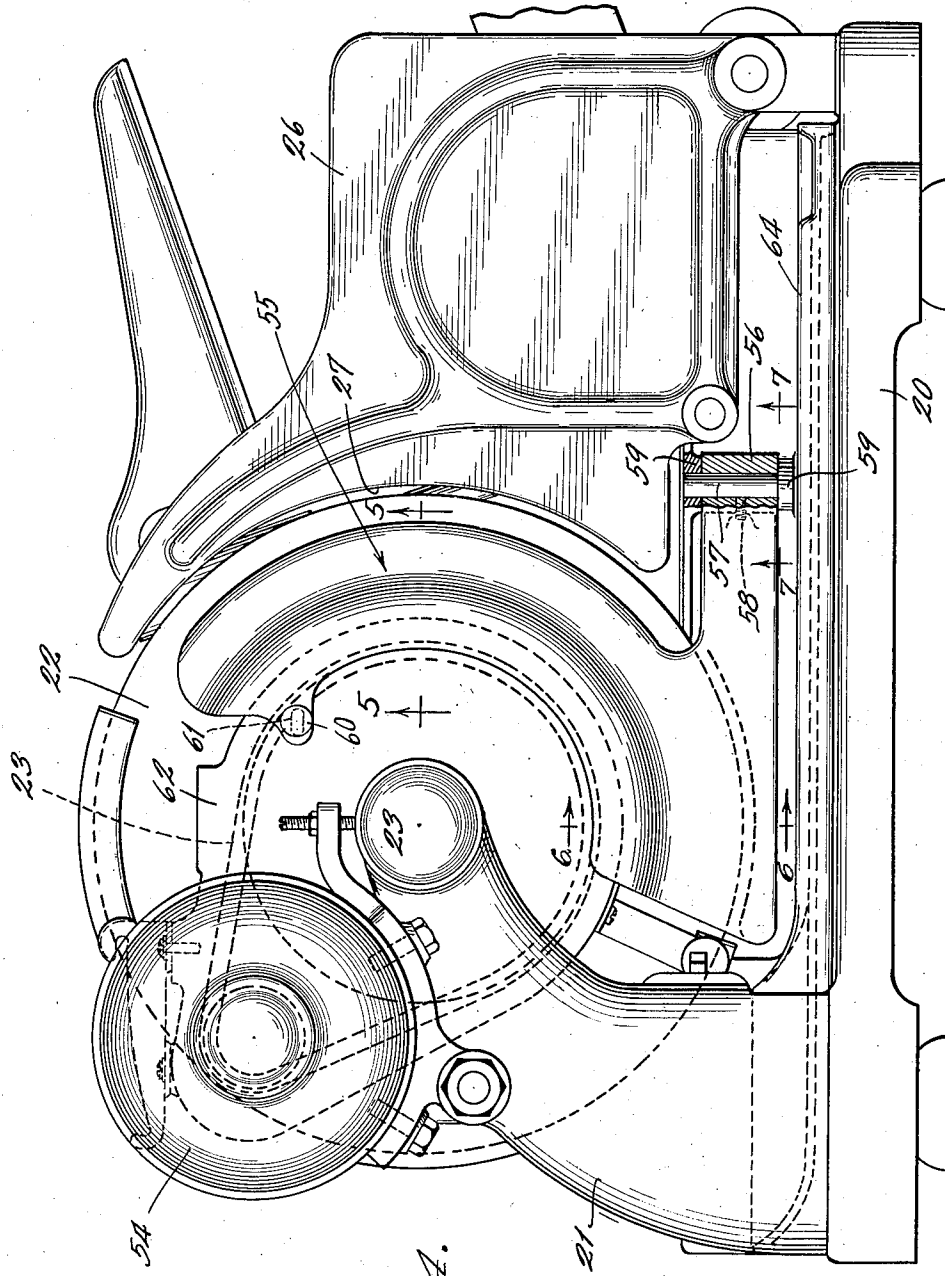


Fig. 1.

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4 Sheets-Sheet 4

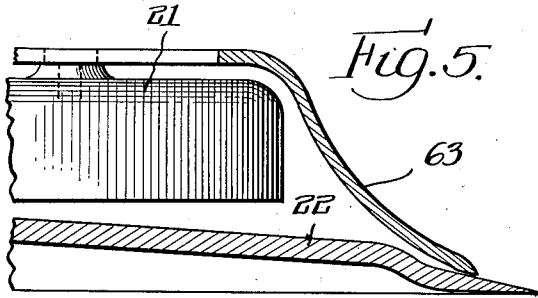


Fig. 5.

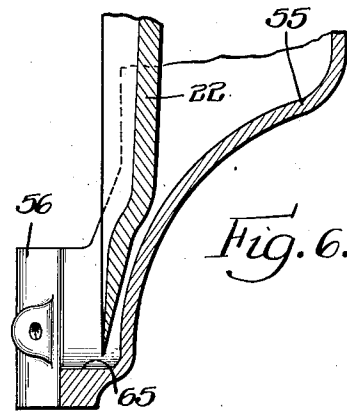


Fig. 6.

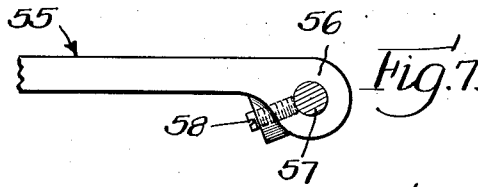


Fig. 7.

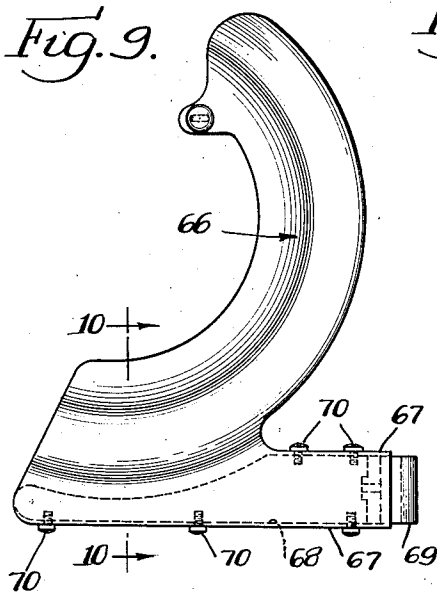


Fig. 9.

Fig. 11.

Fig. 8.

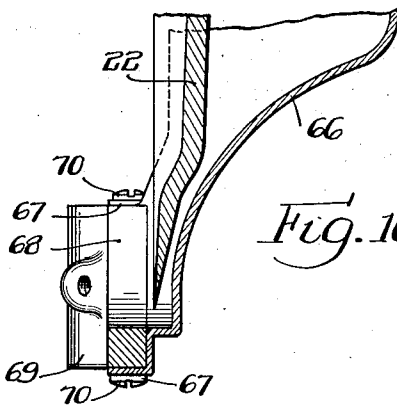
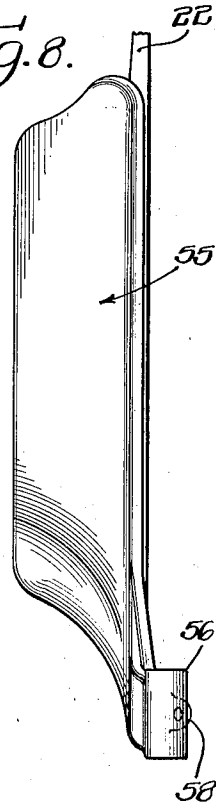
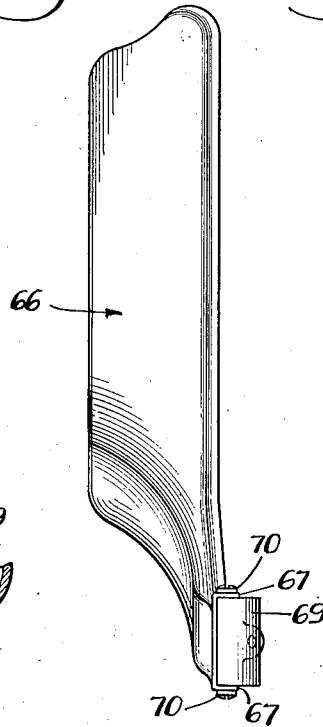


Fig. 10.

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UNITED STATES PATENT OFFICE

2,055,817

DEFLECTOR FOR SLICING MACHINES

Joseph Folk, La Porte, Ind., assignor to U. S. Slicing Machine Company, La Porte, Ind., a corporation of Indiana

Application October 14, 1932, Serial No. 637,755

3 Claims. (Cl. 146—102)

The present invention relates to slicing machines and particularly to deflectors for slicing machines for deflecting the slices away from the cutting edge of the knife as the same are formed.

5 The present invention is applied to a slicing machine in which the carriage is manually reciprocated past the cutting edge of the knife, the thickness of the slice being determined by a gauge plate in a manner which is well known in the art to which this invention pertains.

10 One object of the invention is to provide a deflector with a contact surface so formed as to prevent buckling or curling of the slice as it moves thereon.

15 Another object of this invention is to provide a deflector which can be moved quickly to an inoperative position away from the cutting edge of the knife for cleaning purposes and that can be held positively in operative position if and when desired.

20 Another object of this invention resides in providing the deflector plate with a portion thereof formed to receive scraps and prevent the same from falling directly on the supporting surface of the slice receiver, and also to protect the operator when using the machine, so that in cleaning the slice-receiving tray his hand cannot accidentally be brought into contact with that portion of the cutting edge of the knife which lies adjacent the tray.

30 Other objects of this invention will appear hereinafter as the description thereof proceeds, the novel features, arrangements and combinations being clearly set forth in the appended claims.

35 In the drawings

Fig. 1 represents a side elevational view of a slicing machine embodying my invention;

40 Fig. 2 is a cross-section taken substantially along the line 2—2 of Fig. 1;

Fig. 3 is a front elevational view of the slice deflector as viewed from the right in Fig. 1;

45 Fig. 4 is a side elevational view of a slicing machine using a still further modified form of this invention;

Fig. 5 is a section taken along the line 5—5 of Fig. 4;

Fig. 6 is a section taken substantially along the line 6—6 of Fig. 4;

50 Fig. 7 is a section taken substantially along the line 7—7 of Fig. 4;

Fig. 8 is a front elevational view of the slice deflector shown in Fig. 4, as viewed from the right in that figure;

55 Fig. 9 is a side elevational view of a slice de-

flector similar to that shown in Fig. 4, but showing a modified construction thereof;

Fig. 10 is a section taken substantially along the line 10—10 of Fig. 9;

Fig. 11 is a front elevational view of a slice deflector similar to Fig. 8, but of the modified form of deflector shown in Fig. 4.

The slicing machine comprises a base member 20 having a knife-supporting bracket 21 upon which the circular knife 22 is rotatably mounted, the spindle of the knife being mounted for rotation in the bearing 23 in any desired manner. The carriage mounted for reciprocation on the opposite side of the slicing knife to that viewed in Fig. 1, is adapted to reciprocate the substance parallel to the cutting plane of the knife. The carriage is not shown in the drawings, but is more particularly disclosed in my application Serial No. 633,594, filed September 17, 1932. The uprights 24 and 25, however, shown in Fig. 1, are mounted on the carriage and are adapted to support a clamp which holds the substance against the carriage and feeds the same toward the cutting plane of the knife, either by manual pressure, or yielding pressure, as may be desired.

The slicing machine is provided with a gauge plate 26 of any desired construction against which the substance is fed, and which determines the thickness of the slice in a manner which is well known in the art to which this invention pertains. The edge 27 of the gauge plate is shaped substantially concentrically with the adjacent edge of the knife 22, but is spaced therefrom to permit the slice which is formed to pass between the knife and the gauge plate. The distance which the gauge plate is from the knife determines the thickness of the slice to be cut.

As will be noted from an inspection of Fig. 1, the knife has a substantial space therebeneath which is free from any obstruction, and a slice-receiving tray 28 is mounted on a bracket 29 secured to the side of the base 20 for the purpose of receiving slices as they are formed by the knife.

In the form of the invention shown in Figs. 1, 2 and 3, the deflector which is indicated generally by the reference numeral 30, has a pair of downwardly-extending pivots 31 on the upper and lower portions thereof, the pivots being in alignment with each other and arranged within openings in the laterally extending bosses 32 formed on the knife bracket 21 whereby the deflector 30 may be pivoted to and from a position adjacent the knife, and substantially in engagement therewith. In order to hold the slice deflector in its

operative position adjacent the knife, I provide a thumbscrew 33 which extends through a slot 34 in the deflector and is threaded into the knife bracket whereby the deflector can be firmly held against movement away from the knife. As will be seen from an inspection of Fig. 3, a lug 35 which lies outside of the peripheral edge of the knife, is adapted to abut against the side of a depending lug 36, which extends downwardly on the opposite side of the slicing knife, and forms a bracket support for a guard plate, which protects the opposite side of the knife, and prevents the substance from rubbing thereagainst. This lug 36 is notched at the end thereof and is slipped over the shank of a screw 36' threaded into the base 20. However, the lug 35 can abut against the side of the frame 20 if desired, or the frame can have an upwardly extending projection such as 36 secured thereto, if it is so desired. The main thing is that the deflector is limited in its movement toward the knife by the lug 35 which engages a rigid portion fixed with respect to the cutting plane of the knife.

When it is desired to clean the knife, all that is necessary is to release the single screw 34 and swing the knife about the pivot 31, and if it is desired to remove the deflector entirely from the slicing machine, a vertical movement in an upward direction will release the pins 31 from the openings in the lugs 32. Thus a very simple and efficient means is provided for mounting the deflector in operative position.

As will be seen from an inspection of Fig. 2, the slice deflector has the operative substance-engaging surface thereof formed in such a manner that the substance engages the deflector substantially only at the points 37 and 38, there being a depressed portion 39 with which the slice does not contact in its movement over the surface of the deflector, the slice being indicated by the character 40. The forward edge of the deflector is tapered inwardly at 41 toward the surface of the knife so as to separate the slice from the surface of the knife, and cause the same to move over the surface of the deflector. At the same time the deflector turns outwardly from the surface of the knife so that the surface of the substance between the cutting edge 42 of the knife and the point 37 on the deflector is substantially out of contact with the knife. Therefore the slice moves freely over the deflector and the same does not buckle or curl and thus make it difficult for the operator to grasp the slice and deposit the same onto the slice-receiving tray 28. One thing which causes the substance to be retarded in its movement over the surface of the deflector is the tendency of the slice to adhere to the surface of the deflector, due to the sticky nature of the slice, which has a tendency to create a suction between the slice and the deflector. However, by having the slice contact with only two outwardly, relatively small radius arcuate portions on the deflector, this tendency to create a suction is greatly minimized and as a result, the slice moves freely over the surface of the deflector and can be readily grasped by the operator.

It will also be noted in connection with Figs. 1 and 3 of the drawings, that a portion of the lower edge of the deflector which extends from 43 to 44, extends beyond the periphery of the knife and underlies the edge thereof so as to act as a guard therefor. This portion also acts as a means whereby grease and the like is prevented from being thrown onto the slice-receiving tray, and may be made wider than illustrated in Fig. 3, if

desired, so as to form more of a scrap-receiving member beneath the knife.

In Fig. 4, I have shown a slicing machine in which the motor 54 for driving the same is mounted up above the axis of rotation of the knife 22 and the motor drives the knife by means of a belt 23 arranged over pulleys on the motor shaft and knife shaft respectively. The slice deflector shown in this form of the invention at 55 has an enlarged bearing 56 and a pivot pin 57 secured thereto by means of a set screw 58. This pivot pin 57 extends into the bosses 59 formed on the base 20 of the slicing machine. A single thumbscrew 60 extending through a slot 61 in the deflector near the upper end thereof is threaded into the casing 62 which encloses the drive for the knife, the latter being fixed relative to the knife bracket 21 or formed integral therewith. When it is desired to move the deflector to an inoperative position, the thumbscrew 60 is released and the deflector moved about the pivot 57 to inoperative position away from the cutting plane of the knife. The slice engaging surface of the slice deflector indicated at 63 in Fig. 5 is shaped similarly to the corresponding surface on the slice deflector 30 shown in Fig. 2 and operates in substantially the same manner. The lower portion of the slice deflector which lies adjacent the slice receiving tray 64 has the lower edge thereof extending across the cutting plane of the knife a substantial distance toward the side of the base of the slicing machine as indicated in Fig. 7 at 65 whereby a considerable portion of the slice deflector acts as means for receiving scraps and grease which can be readily removed when the slice deflector is moved about its pivot 57 to inoperative position.

In Figs. 9, 10, and 11, I have illustrated a slice deflector similar to that shown in Fig. 4 and adapted to be mounted in the same manner but this slice deflector is a built up slice deflector instead of being a one piece construction as illustrated in Fig. 4. The deflector 66 has a contour substantially the same as the deflector 55, but the lower portion thereof is provided with the inturned flanges 67 which embrace an arm 68 having a bearing 69 thereon through which the pivot pin extends the same as in the form of the invention shown in Fig. 4. The flanges are secured to the arm 68 by means of the screws 70 so as to form a unitary construction which operates in the same manner as the deflector in Fig. 4. However, by using this construction, the deflector itself can be made of a relatively light material such as sheet metal and the arm 68 made of a strong relatively rigid material to form a substantial support for the deflector while permitting the deflector to be made out of a sheet metal which is non-corrosive and of light construction.

Obviously those skilled in the art to which this invention pertains may make various changes in the forms of the invention illustrated in the drawings without departing from the spirit of this invention, and therefore I do not wish to be limited except as set forth hereinafter in the appended claims.

Having thus fully described my invention, what I claim as new and desire to obtain by United States Letters Patent is:

1. In a slicing machine, the combination with 70 a circular disk slicing knife, of a slice deflector for deflecting slices away from the side of said knife, said deflector having substantially concentric spaced ribs thereon substantially concentric with the knife edge, one of said ribs lying closely adja- 75

cent the edge of said knife to turn the slices abruptly away from the knife so that the slice will not contact with the portion of the deflector between said ribs, and the other of said ribs holding the free end of said slice out of contact with the portion of the deflector between said ribs, said ribs having their slice engaging portions rounded to permit easy movement of the slice thereover while having limited contact therewith.

- 10 2. A slicing machine comprising a rotatably mounted knife, a deflector mounted adjacent said knife, said deflector having a rounded substantially semi-cylindrical portion adjacent the cutting edge, a second rounded substantially semi-cylindrical portion arranged a predetermined distance from said first named portion, and a curved portion connecting said first two portions, said curved portion extending inwardly a pre-

determined distance whereby a cut slice will be deflected by the first rounded portion and be prevented from engaging the last named curved portion, thereby overcoming friction between the slice and the deflector.

3. A slicing machine comprising a rotatably mounted knife, a slice deflector arranged adjacent the cutting edge of the knife and comprising an outwardly extending plate to deflect a slice as it is cut by the knife, said outwardly extending plate having an outwardly curved convex portion along the edge of the plate adjacent the knife and another outwardly curved convex portion along the opposite edge of the plate, the portion of the plate between said convex portions being curved inwardly to form an intermediate concave portion of substantial width.

JOSEPH FOLK.