

[54] **CONTINUOUS FEED BACON SLICER**

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[52] U.S. Cl. **83/420; 83/355; 83/422**

[51] Int. Cl. **B26d 4/34**

[58] Field of Search **83/418, 420, 422, 355**

[56] **References Cited**

UNITED STATES PATENTS

3,354,920 11/1967 Hertwig 83/418

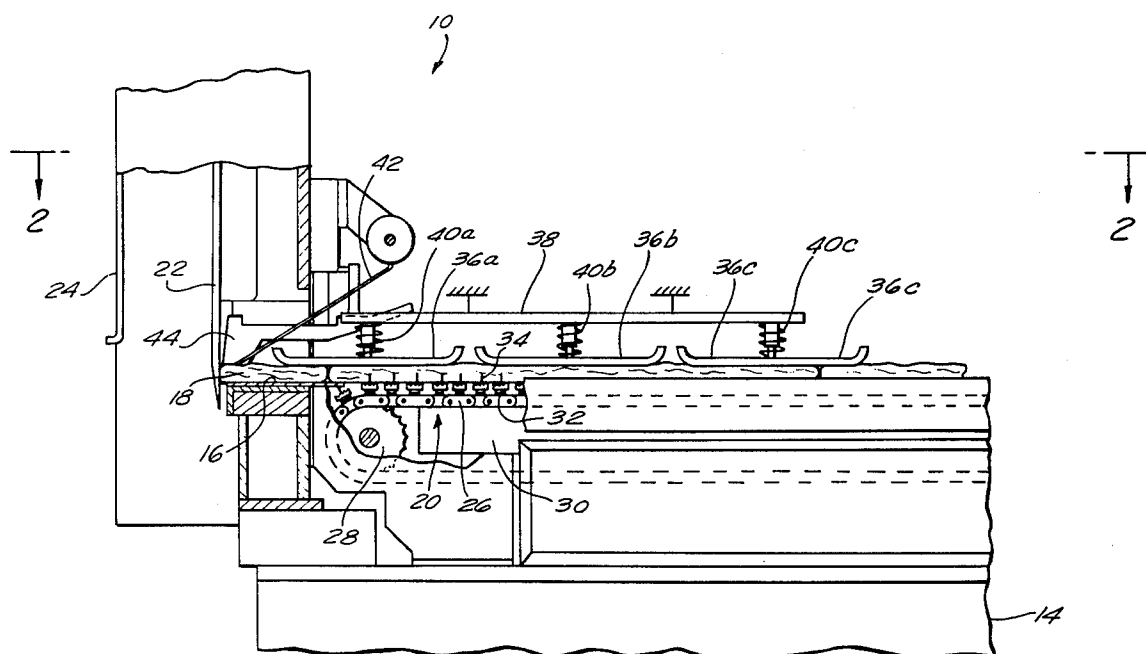
Primary Examiner—Willie G. Abercrombie

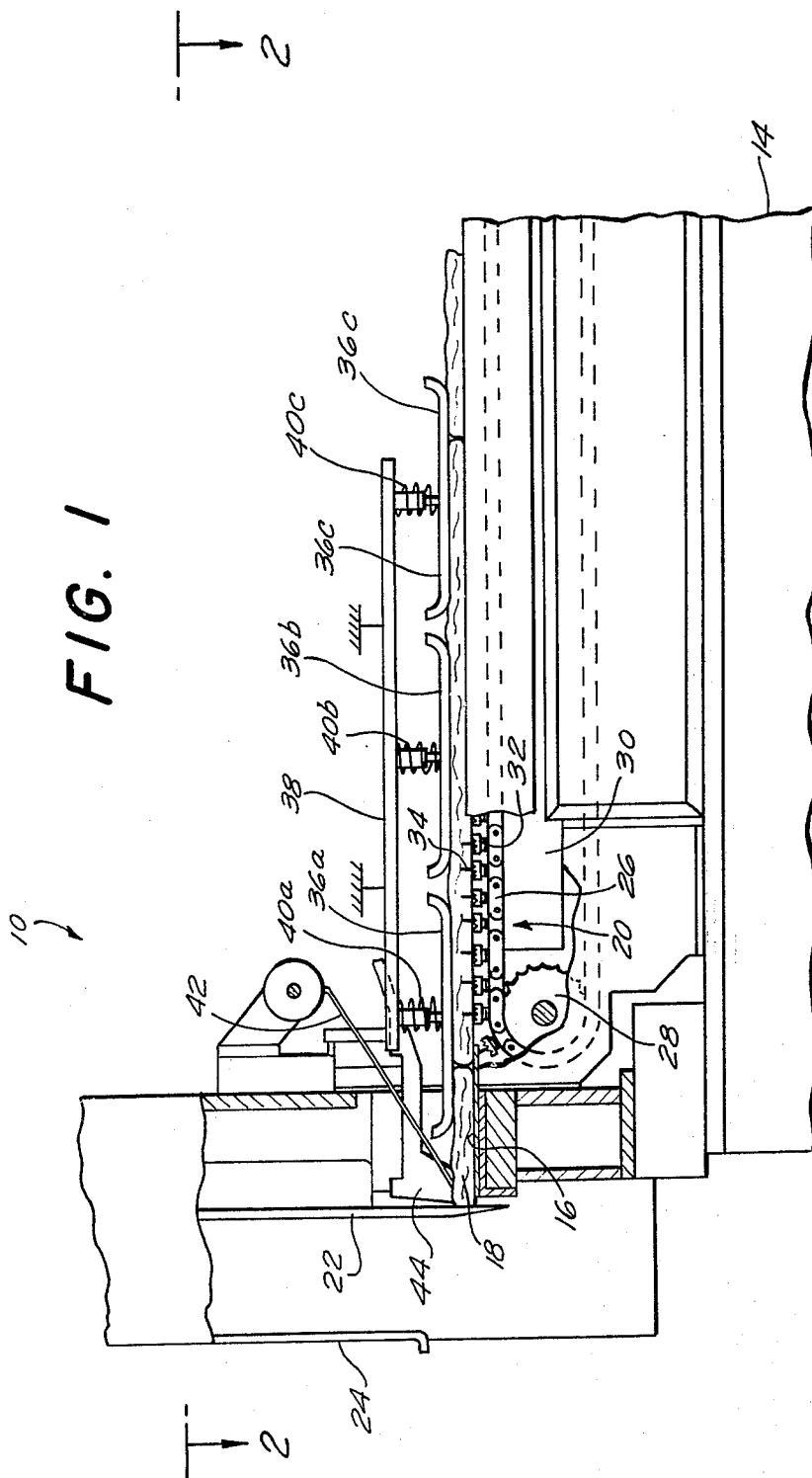
Attorney, Agent, or Firm—Kane, Dalsimer, Kane,
Sullivan and Kurucz

[57] **ABSTRACT**

A slicing machine is provided for continuously delivering bacon bellies into a continuously rotating slicing blade. An endless chain conveyor drives the belly forwardly into the blade. Spring loaded shoes assure positive engagement of the driving conveyor with the bacon belly and also maintains the product in a relatively flat position for optimum slicing. Pressure means adjacent the blade for engagement with the top and at least one side of the belly cooperate in producing uniform slices particularly during slicing of the trailing belly end.

3 Claims, 7 Drawing Figures





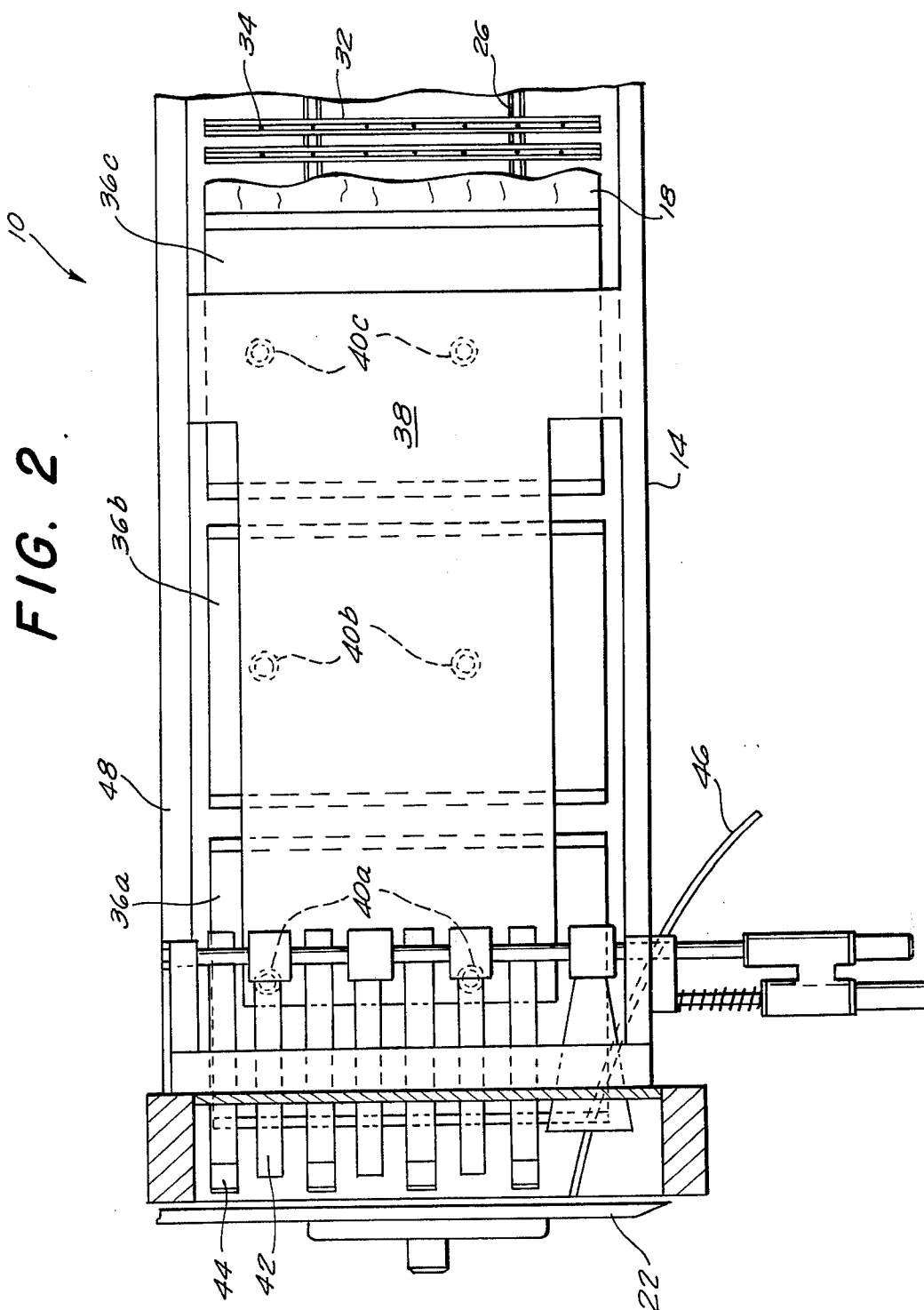


FIG. 3

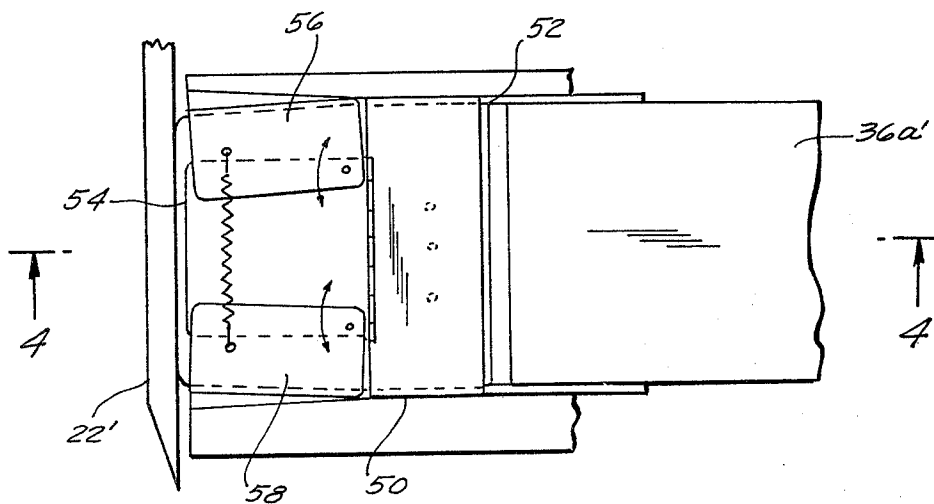


FIG. 4

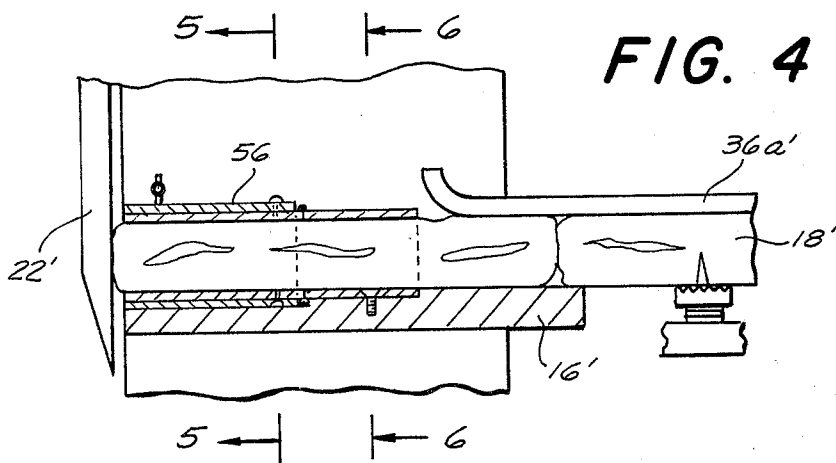


FIG. 5

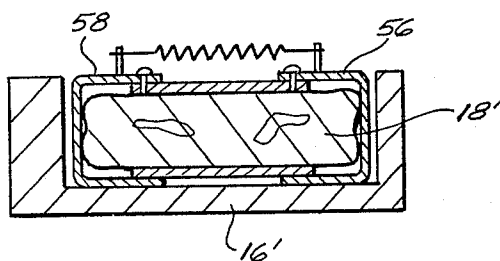


FIG. 6

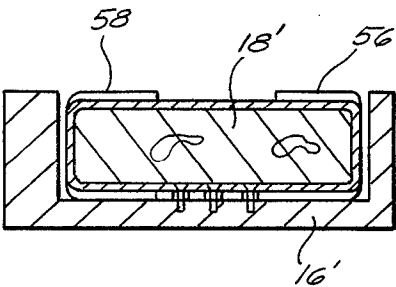
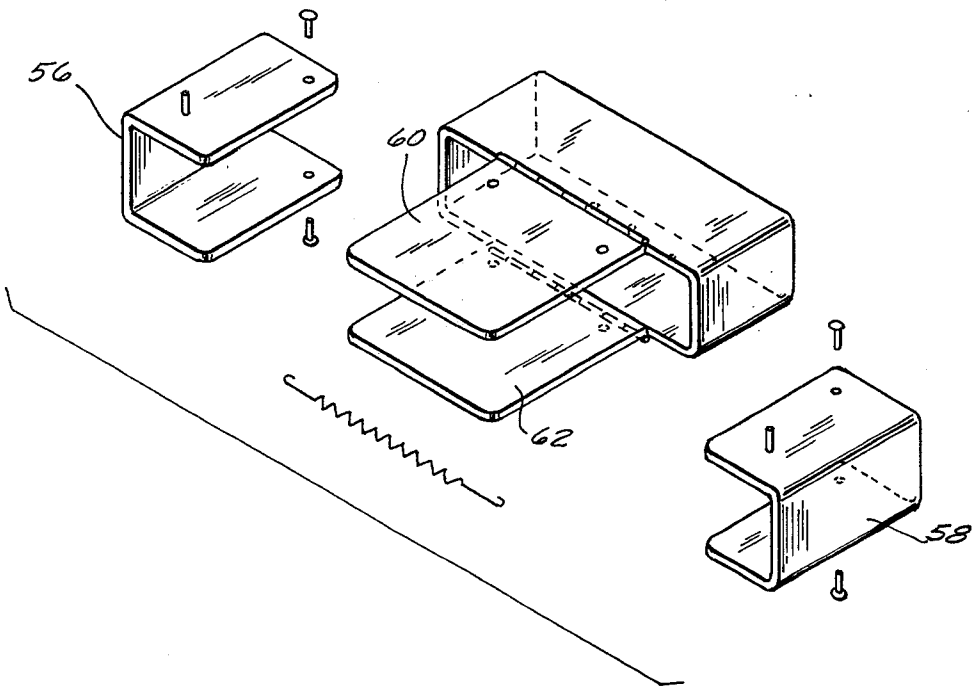


FIG. 7



CONTINUOUS FEED BACON SLICER

BACKGROUND OF THE INVENTION

In the past and in many respects today, bacon slicing machines generally feed individual bacon bellies into a continuously rotating slicing blade thereby producing slices of bacon eventually arranged in the selected manner and grouped into predetermined weighed packages. When a bacon belly has been consumed and completely sliced, the feeding mechanism is retracted and an attendant will insert another bacon belly for feeding into the slicing blade. Obviously, machines of this type lose production time during the reciprocation of the feeding mechanism and prior to the engagement with a fresh bacon belly and its advance to slicing position.

Attempts have been made to maximize the use of operating time of the slicing machine in actually producing slices by providing for the continuous feed of successive bacon bellies arranged in abutting relationship for advance into the slicing blade. An example of apparatus of this type is disclosed in U.S. Pat. No. 3,354,920 granted Nov. 28, 1967.

SUMMARY OF THE INVENTION

A principal object of the present invention is to improve upon the apparatus disclosed in the aforementioned patent by providing a more simple and reliable machine for continuously feeding successive bacon bellies into a slicing machine while assuring proper slicing of the belly trailing ends. Further objects and advantages will become apparent from the following detailed description which is to be taken in conjunction with the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS:

In the drawings:

FIG. 1 is an elevational view of a slicing machine in accordance with the present invention with certain parts removed, broken away and sectioned;

FIG. 2 is a plan view thereof;

FIG. 3 is a fragmentary top plan view showing an embodiment of pressure applying means interposed between the pressure shoe and slicing blade;

FIG. 4 is a sectional view taken along the line 4—4 of FIG. 3;

FIG. 5 is a sectional view taken along the line 5—5 of FIG. 4;

FIG. 6 is a sectional view taken along the line 6—6 of FIG. 4; and

FIG. 7 is an exploded perspective view of the pressure applying means of FIGS. 3—6.

DETAILED DESCRIPTION:

The preferred slicing machine 10 comprises a supporting table 14 having a platen or feed bed 16 over which the bacon belly 18 is fed by the endless chain conveyor 20 to the slicing blade 22. The blade 22 is rotary and is in the form of an eccentric disc which revolves at relatively high speeds. The portion of the blade having the greatest radius serves to slice the edge of the belly 18, with the portion of the blade having a minimum radius providing clearance for the belly to be fed outwardly thereby permitting the initiation of the next slice. The blade 22 is encased in a housing 24 which serves to protect the operator and also prevents the particles of sliced product from being thrown out-

wardly from the blade by centrifugal force. The blade 22 is mounted at the end of a rotatable shaft (not shown) and this shaft in turn may be driven by a mechanism well known in the art.

The bacon bellies 18 are advanced into the slicing blade 22 in end to end abutting relationship by the endless chain conveyor 20 which extends substantially the full length of the bed 16. This conveyor 20 may be of the tractor type as disclosed in the aforementioned patent including a pair of endless chains 26 suitably mounted on a drive sprocket 28 and idler sprocket (not shown). The rails 30 support the endless chains 26 throughout the length of the upper run to provide a substantially flat conveyor surface. This surface is defined by transverse cleats 32 from which extend a plurality of spikes 34. These spikes 34 engage with and penetrate the bacon belly 18 to thereby drive it forwardly into the blade 22. In addition, chisel like or knife projections for penetrating the belly can be employed.

In order to assure optimum engagement of the bacon bellies 18 with the upper run surface as defined by the cleats 32 of the conveyor 20 and particularly the penetration by spikes 34, the upper surface of the bellies 18 are urged downwardly under the influence of spring loaded shoes 36a, 36b and 36c. Of course, any number of these shoes may be provided as the situation dictates. The shoes are suspended from the stationary plate 38 with the desired pressure being furnished by the springs 40a, 40b and 40c respectively.

Normally the bacon bellies 18 are carried forwardly on the conveyor 20 continuously with the bellies abutting end to end. In order to assure proper feeding of the belly 18 particularly as its trailing end leaves the conveyor 20 and is supported on the bed 16, means are provided for preventing undesirable movement or shifting of the belly trailing end. Toward this end, the forward shoe 36a comes into play. In addition, pressure fingers 42 contact the upper surface of the bacon belly exerting downward pressure on the trailing end of the bacon belly. In addition, a second series of fingers 44 similarly apply a downward force on the surfaces of the belly trailing end thereby reducing the tendency of the belly turning askew while being sliced thereby assuring a full slice of the desired thickness. Similarly side finger 46 exerts pressure on the side of the trailing belly end which is thereby forced into engagement with the side rail 48. Of course each of these fingers may be spring biased in attaining the desired pressure to be exerted against the engaged surfaces of the bacon belly 18.

A further and somewhat preferred embodiment of pressure applying means is illustrated in FIGS. 3—7. As in the previous case this means is interposed between the pressure shoe 36a' and slicing blade 22'. This means includes a horn, funnel or tube 50. This horn includes a fixed rear end 52 which is open and sufficiently large in cross-section to accommodate essentially all contemplated sizes of bacon bellies 18'. The front end 54 however, is reduced in cross-section and includes opposed inwardly biased pivotal arms 56 and 58; and at least the top plate 60 may be pivotal and biased downwardly with the bottom plate 62 either being stationary or pivotally biased upwardly. When the bacon belly 18' enters the rear end 52 of the horn 50 it will be gripped between the arms 56 and 58 and the plate 60 and 62. As a result of the spring force, the pressure applied to the trailing end of the bacon belly

18' will be sufficient to assure proper cutting by the blade 22'.

Although the sliced bacon coming from the slicing machine 10 may be arranged in any suitable fashion, it is contemplated that the slices are arranged in groups in shingled form of controlled weight. Apparatus for this purpose is presently marketed by Cashin Systems Corp., Williston Park, New York, and is disclosed in commonly assigned U.S. Pat. No. 2,903,032 granted Sept. 8, 1959; U.S. Pat. No. 2,969,099, granted Jan. 23, 1961; and U.S. Pat. No. 3,027,924 granted Apr. 3, 1962.

In regard to further details of the slicing machine 10 reference is made to commercially available slicing machines marketed under the name Hydro-Matic Slicer which is fully disclosed in the operating instructions for the Anco No. 827C Hydro-Matic Bacon Slicer, available from the manufacturer, The Allbright-Nell Company of Chicago, Ill.

Thus the several aforementioned objects and advantages are most effectively attained. Although a single somewhat preferred embodiment has been disclosed and described in detail herein, it should be understood that this invention is in no sense limited thereby and its scope is to be determined by that of the appended claims.

I claim:

1. A bacon slicing machine having a rotatable slicer blade, a bed and side guide across which a bacon belly is moved forwardly into the path of the blade, an endless tractor conveyor having an upper run defining a substantially flat conveyor surface essentially planar with the bed, penetrating means on the periphery of the conveyor for engaging with surfaces of the bacon belly for feeding it forwardly into the blade, downwardly biased stationary pressure shoe means disposed above the conveyor for engaging with the upper surfaces of the bacon belly and urging the belly downwardly into engagement with the belly penetrating means extending from the conveyor to assure positive engagement in feeding of the belly into the blade, the pressure shoe means including a plurality of transversely extending pressure shoes that are adapted to engage with the upper surface of the bacon belly, a stationary support for the shoes and interposed spring means for biasing the shoes downwardly towards the conveyor into engagement with the bacon bellies, pressure applying means forwardly of the pressure shoe means, the pressure applying means including a plurality of fingers mounted at one end and the other end extending freely into engagement with surfaces of the bacon belly between the conveyor and slicing blade, at least one of the fingers engaging a side of the bacon belly while at least one finger engages the top of the bacon belly for preventing the belly trailing end from becoming askew

as it is being sliced by the blade, the leading end of the conveyor and interposed between the blade and the conveyor for engaging with the surfaces of the belly to assure proper feeding of the belly into the blade and particularly belly trailing ends as the trailing end is fed forwardly by the next succeeding bacon belly thereby assuring a full slice of selected thickness, and the conveyor and pressure shoe means together with the pressure applying means cooperating in facilitating the feeding of bacon bellies continuously in endwise abutting relationship into the slicing blade.

2. The invention in accordance with claim 1 wherein the conveyor includes a pair of spaced sprocket chains mounted on driven and idler sprockets and cleats extending transversely and connected to each of the sprocket chains and arranged at spaced intervals thereon, and spikes extending from each of the cleats for penetrating the bacon belly to facilitate feeding of the belly forwardly into the blade.

3. A bacon slicing machine having a rotatable slicer blade, a bed and side guide across which a bacon belly is moved forwardly into the path of the blade, an endless tractor conveyor having an upper run defining a substantially flat conveyor surface essentially planar with the bed, penetrating means on the periphery of the conveyor for engaging with surfaces of the bacon belly for feeding it forwardly into the blade, downwardly biased stationary pressure shoe means disposed above the conveyor for engaging with the upper surfaces of the bacon belly and urging the belly downwardly into engagement with the belly penetrating means extending from the conveyor to assure positive engagement in feeding of the belly into the blade, pressure applying means forwardly of the leading end of the conveyor and interposed between the blade and the conveyor for engaging with the surfaces of the bacon belly to assure proper feeding of the belly into the blade and particularly belly trailing ends as the trailing end is fed forwardly by the next succeeding bacon belly thereby assuring a full slice of selected thickness, and the conveyor and pressure shoe means together with the pressure applying means cooperating in facilitating the feeding of bacon bellies continuously in endwise abutting relationship into the slicing blade, the pressure applying means including a horn having a rear end and a forward end and through which the bacon belly is adapted to pass into the slicing blade, the forward end of the horn having means for reducing its cross-sectional size in order that surfaces of the forward end of the horn are adapted to grip the trailing end of the bacon belly being sliced regardless of the cross-sectional size of the bacon belly to assure against the belly trailing end from becoming askew as it is being sliced by the blade.

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