Aug. 20, 1957 D. K. STRAND 2,803,279

BUN SLICER HAVING ADJUSTABLE BLADES

Filed Sept. 3, 1954 2 Sheets-Sheet 1

Fig.1

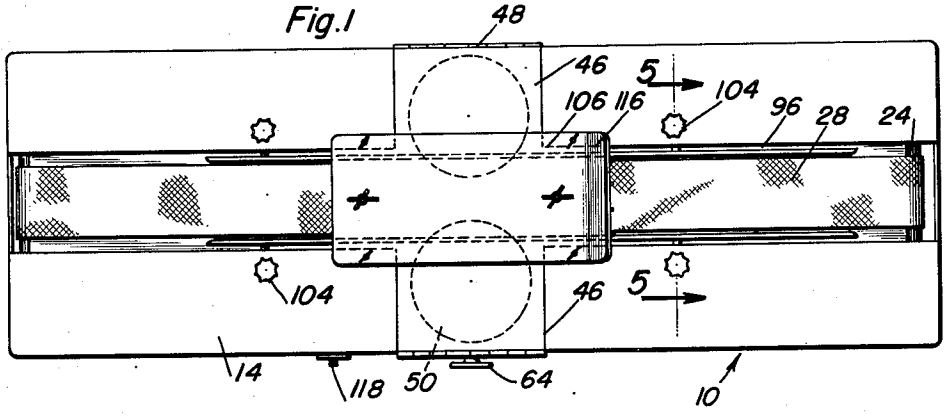


Fig.2

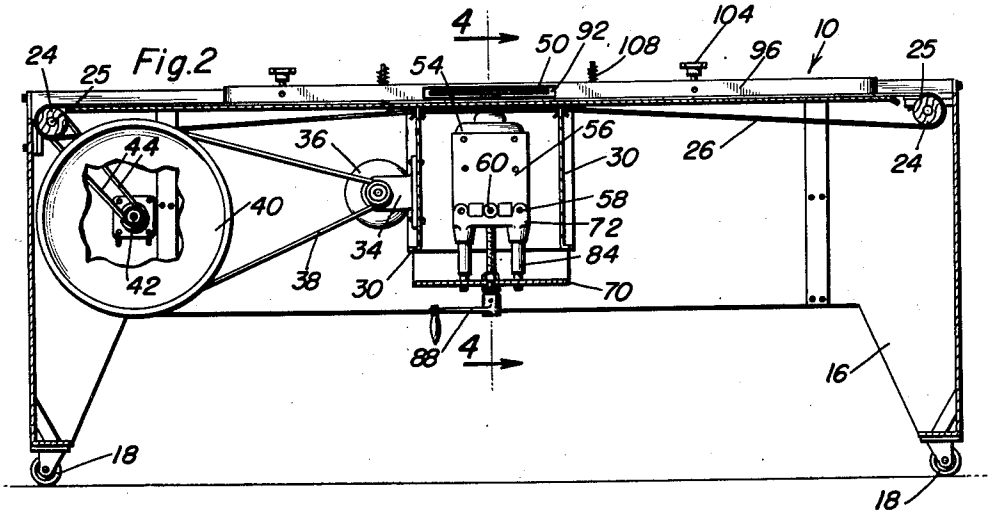
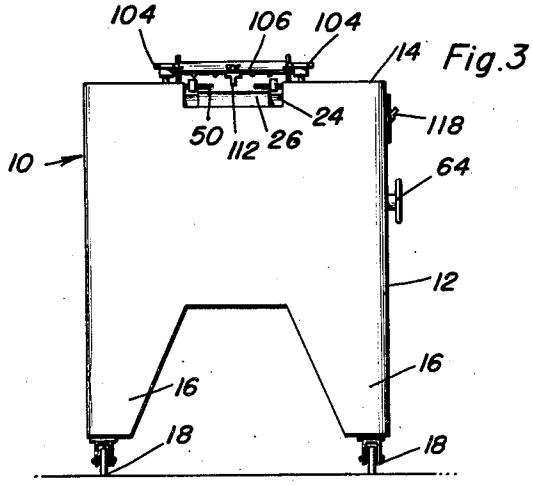


Fig.3



Donald K. Strand

INVENTOR.

BY Thomas A. O'Brien and Harvey B. Jacobson

Attorneys

Aug. 20, 1957 D. K. STRAND 2,803,279

BUN SLICER HAVING ADJUSTABLE BLADES

Filed Sept. 3, 1954 2 Sheets-Sheet 2

Fig. 4

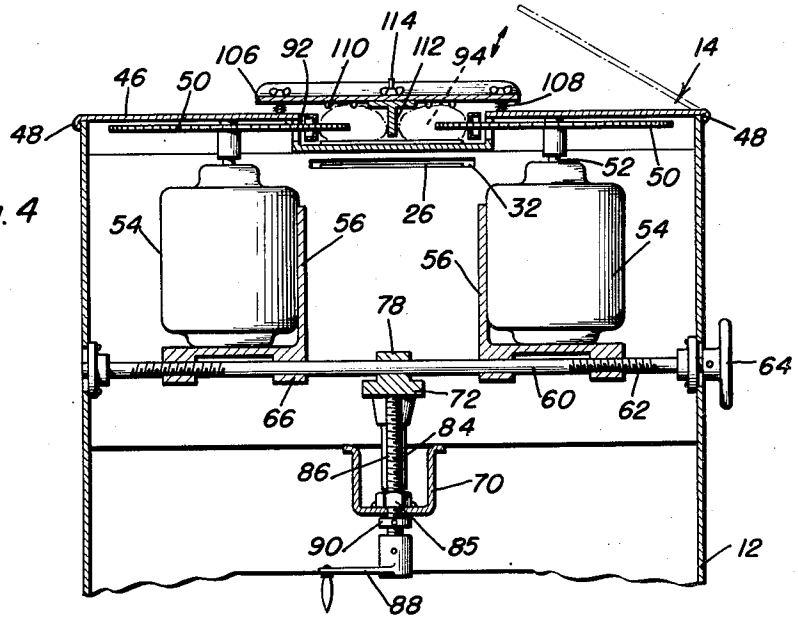
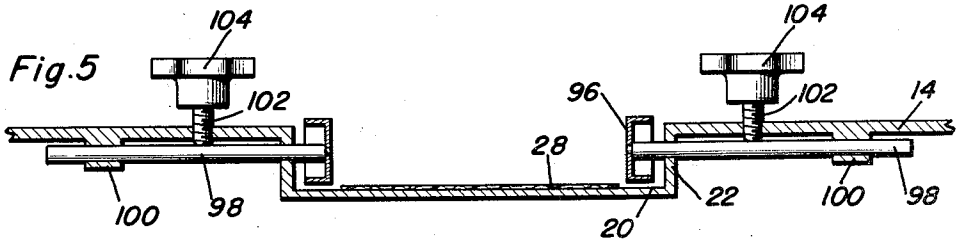


Fig. 5



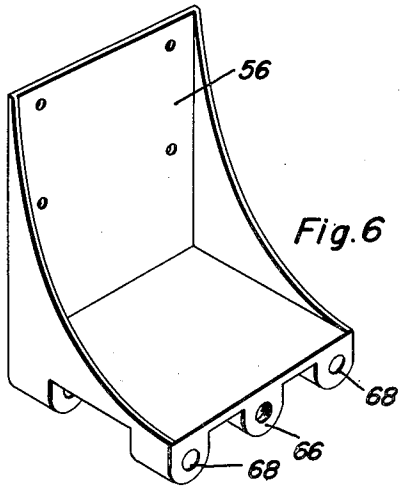


Fig. 6

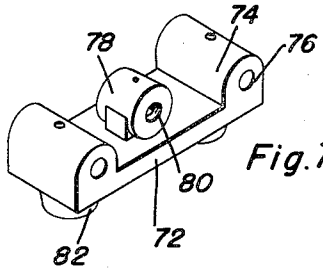


Fig. 7

Donald K. Strand
INVENTOR.

BY Clarence A. O'Brien and Harvey B. Jacobson
Attorneys

United States Patent Office 2,803,279 Patented Aug. 20, 1957

2,803,279

BUN SLICER HAVING ADJUSTABLE BLADES

Donald K. Strand, Galesburg, Ill., assignor to Stevens Sales Company, Inc., Galesburg, Ill., a corporation of Illinois

Application September 3, 1954, Serial No. 454,166

3 Claims. (Cl. 146—73)

This invention relates to a bun slicing machine, and more specifically provides a device for quickly and easily forming a horizontal slit or cut in a bread bun prior to the packaging thereof, thereby facilitating the use of the bun in forming a sandwich or the like.

Frequently, it is desirable to slice buns or rolls commonly known as hamburger rolls in such a manner that the slice does not extend entirely through the roll, thereby leaving a solid portion at one edge thereof which functions as a hinge for the separated portions of the roll, thereby facilitating the utilization of the roll in forming a sandwich or the like. Accordingly, it is the primary object of the present invention to provide a bun slicing machine that will partially slice through two rows of buns passed between two oppositely disposed rotating saws wherein the buns are moved along a conveyor, thereby forming a continuous slicing operation on two rows of buns or rolls.

Another object of this invention is to provide a bun slicing machine conformable to the preceding object which includes a pressure plate for guiding and positioning the buns as well as precluding rotation thereof when engaged by the rotating saws.

Another important object of the present invention is to provide a bun slicing machine wherein the depth of the slice in the roll may be adjusted as well as the height of the bottom portion of the roll being adjustable, thereby adapting the machine for various types of rolls or buns and permitting various characteristics of the slice or cut performed on similar buns, depending upon the specific use to which the buns will be employed.

Still another important feature of the present invention is to eliminate damage to the buns or rolls from faulty slicing, thereby ensuring a uniformly sliced product that will be highly desirable to consumers.

Other important objects of the present invention will be found in its simplicity of construction, efficiency and speed of operation, its adaptability for its specific purpose, its adjustability and its relatively inexpensive manufacture maintenance.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

Figure 1 is a top plan view of the bun slicing machine of the present invention;

Figure 2 is a longitudinal, vertical sectional view taken substantially along a longitudinal center line of the bun slicing machine of the present invention;

Figure 3 is an end view of the present invention;

Figure 4 is an enlarged transverse, vertical sectional view taken substantially upon a plane passing along section line 4—4 of Figure 2 showing structural details of the bun slicing machine and showing the means for vertically and laterally adjusting the rotating saw blades;

Figure 5 is an enlarged detail sectional view taken substantially upon a plane passing along section line 5—5 of Figure 1, showing the details of construction of the adjustable side rails and the relationship of the conveying surface to the recessed portion of the frame;

Figure 6 is a perspective view of one of the brackets for supporting a saw blade motor; and

Figure 7 is a perspective view showing the details of the adjustable brackets for the driving means for the rotatable saw.

Referring now specifically to the drawings, it will be seen that the numeral **10** generally designates the bun slicing machine of the present invention including a hollow frame member **12** with a smooth top **14**. The frame **12** is generally elongated in the shape of a rectangle and formed from side sheet-like members that form a hollow frame **12**. Depending from the frame **12** at each end and at each corner is a supporting leg **16** in the nature of a rectangular hollow member having a caster wheel **18** at the bottom end thereof for movably supporting the bun slicing machine **10** of the present invention. The top surface **14** is provided with an elongated longitudinal recessed portion **20** having depending side walls **22** integrally formed with the upper surface **14**. At each end of the recessed portion **20** is an elongated roller **24** having an endless conveyor belt **26** encircling the rollers **24**. The rollers **24** are mounted on a transverse shaft **26** secured to opposite side edges **22** of the recess **20**. One surface of the endless conveyor which is designated by the numeral **28** is generally a conveying surface, and the other portion thereof is spaced therebelow for forming a return or endless conveyor belt **26**.

Depending from the undersurface of the top **14** is a pair of bracket members **30** having slots **32** therein for receiving the conveyor belt **26** during a portion of its movement. The brackets **30** are in the nature of transverse plates secured between the side edges of the frame **12**. Secured to one of the depending brackets **30** is a laterally extending bracket **34** for supporting an electric motor **36** that drives a suitable V-belt **38** that encircles an enlarged pulley **40** for driving a countershaft **42** which, in turn, drives a V-belt **44** for driving one of the rollers **24** wherein the roller **24** will be driven at a greatly reduced speed from the electric motor **36**.

Pivotally secured to the upper surface **14** adjacent the center thereof is a pair of pivotally mounted closures **46** secured to the side edges of the frame by hinge members **48**, wherein the closures **46** will be pivoted about a horizontal longitudinal axis for raising from a position substantially flush against the upper surface **14** to a position for exposing to view two horizontally disposed rotating saw blades **50**, wherein each of the saw blades **50** is provided with a shaft **52** driven by an electric motor **54** that is secured to a bracket **56** mounted on a pair of transverse shafts **58** for sliding movement wherein the transverse shafts **58** are slidably secured to the sides of the frame **12**. Centrally of the transverse shaft **58** is a transverse rod **60** having oppositely threaded end portions **62** with one end projecting exteriorly of the frame **12** and provided with an operating knob **64** for rotating the rod **60**. It is noted that the bracket **56** is provided with a depending central lug **66** that is externally threaded for engagement with the threads **62** wherein the bracket **56** will be transversely moved upon actuation of the threaded knob **64**. Depending apertured lugs **68** are secured to the outer edges of the bracket **56** for sliding movement in relation to the transverse shaft **58**. Centrally of the bracket **30** is secured a depending U-shaped member **70** in longitudinal relation which is disposed beneath a member **72** that is provided with a pair of upstanding lugs **74** having apertures **76** therein for positioning over the transverse rods **58** and a centrally disposed upstanding lug **78** having an aperture therein designated by the

numeral **80** for engaging the operating rod **60**. Depending from the undersurface of the centrally disposed member **72** is a pair of depending lugs **82** for receiving and positioning guide members **84** which permit and guide vertical movement of the member **72** in relation to the member **70**. A nut **85** is rigidly secured to the bight portion of the U-shaped member **70** and threadedly engages an elongated threaded adjusting screw **86** that is provided with an offset handle **88** at the lower end thereof, together with a collar **90** that is adjustable thereon between the handle **88** and the U-shaped member **70** wherein by rotation of the handle **88**, the member **72** together with the transverse rod **58** and the actuating rod **60** is vertically adjusted, thereby vertically adjusting the position of the bracket **56**, motor **54** and the rotating saw blade **50**. It is noted that the saw blades **50** extend through slots **92** in the side walls **22** of the recessed portion **20** of the upper wall **14** of the frame **12**. The periphery of the saws **50** extends over the conveying surface **28** of the conveying belt **26** wherein buns or rolls **94** will be sliced as they pass along the conveying surface **28**.

Positioned along the interior wall **22** of the recessed member **20** is a pair of elongated longitudinal guide rails **96** with each of the guide rails **96** having a pair of laterally projecting rods **98** that are slidably received in depending lugs **100** and a suitable aperture in the wall of the recess **20** wherein the guide rails **96** may be adjusted laterally in relation to the conveying surface **28**. A pair of setscrews **102** having an operating knob **104** on the upper end thereof is screw threaded through the top member **14** for engagement with the rods **98**, thereby adjusting the lateral adjustment of the rods **98** and the guide rails **96**. The guide rails **96** will necessarily be provided with slots for receiving the periphery of the rotating saw blades **50** for permitting slicing of the rolls or buns **94**.

Positioned over the periphery of the inner portion of the saw blades **50** is an elongated pressure plate **106** mounted on upstanding bolts secured to the top member **14** wherein compression coil springs **108** are secured around the stud between the top member **14** and the pressure plate **106** wherein the pressure plate will be retained in parallel spaced relation to the top **14** and to the conveying surface **28**. On the undersurface of the pressure plate **106** is a plurality of longitudinal ribs **110** for engaging the buns **94** thereby precluding rotation of the buns **94** when the buns **94** are engaged by the rotating saw blades **50**.

Secured centrally of the pressure plate **106** on the undersurface thereof is a T-shaped dividing bar **112** secured thereto by fastening means **114** wherein the area between the pressure plate **106** and the conveying surface **28** will be divided equally into two paths for movement of the buns **94**. The entrance end of the pressure plate **106** is provided with an upwardly flared portion **116** for guiding the buns **94** into the area between the rotating saws **50**. Further, the dividing bar **112** is also provided with an upturned end portion for forming a guide for the buns **94**.

Positioned on the side edge of the frame **12** is a suitable control switch **118** for controlling the operation of the motors **36** and **54** which operate independently of each other.

In operation, the buns **94** are positioned on the conveying surface **28** of the conveyor **26** wherein they pass between the rotating saws **50** in back-to-back relation wherein the dividing bar **112** positions the buns accurately in relation to the saws **50**. The longitudinal rods **110** on the pressure plate **106** engage the upper surface of the buns **94**, thereby preventing rotation of the buns when they are engaged by the rotating saws **50**. It will be seen that the pressure plate **106** may be adjusted in relation to the upper surface of the rotating saws **50** and the guide rails **96** may be laterally adjusted for adjusting the width of the conveying surface **28**. By

lateral adjustment of the saws **50** by rotating the operating knob **64**, the distance between the adjacent periphery of the rotating saws **50** may be adjusted, thereby adjusting the depth of the slice made in the buns **94**. Also, this permits the use of the bun slicing machine of the present invention in conjunction with buns or rolls of various sizes and shapes. The handle **88** may be rotated for vertical adjustment of the saws **50**, thereby adjusting the thickness of each half of the bun as defined by the slice of the rotating saws **50**. Since the member **72** is positioned centrally of the transverse shafts **58** and the transverse rod **60**, by vertical adjustment of the central member **72**, the motor **54** together with the brackets **56** and the transverse rods **58** and **60** are vertically adjusted by a suitable slot connection to the frame **12**. Obviously, suitable adjustable means may be provided for adjusting the tension of the conveying belt **26** and the particular speed at which the device is operated depends upon the type of buns being sliced, as well as other pertinent factors.

From the foregoing, the construction and operation of the device will be readily understood, and further explanation is believed to be unnecessary. However, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction shown and described, and accordingly, all suitable modifications and equivalents may be resorted to, falling within the scope of the appended claims.

What is claimed as new is as follows:

1. A bun slicing machine comprising a frame, an elongated conveyor mounted on said frame having a horizontal conveying surface extending longitudinally of the frame, a pair of saw blades extending inwardly over the conveying surface for slicing opposite edges of a pair of buns passed between the saws, means for adjusting the distance between the saw blades, means for adjusting the vertical position of the saw blades, and drive means for said saw blades and conveyor, and a pressure plate positioned over a portion of the conveying surface and said saw blades in parallel spaced relation, longitudinal ribs on the undersurface of said plate for precluding rotation of the buns when in engagement with the saw blades, and a dividing bar secured to said pressure plate in extending relation to the undersurface for dividing the conveying surface under the pressure plate into two equal and separate paths for guiding the buns between the saws.

2. A bun slicing machine comprising a frame, an elongated conveyor mounted on said frame having a horizontal conveying surface extending longitudinally of the frame, a pair of saw blades extending inwardly over the conveying surface for slicing the outer edges of a pair of buns passed between the saws, means for adjusting the distance between the saw blades for varying the depth of the slice, means for adjusting the vertical position of the saw blades for varying the elevation of the slice in the bun, and drive means for said saw blades and conveyor, said frame having a longitudinal recess receiving the conveying surface of the conveyor, laterally adjustable side rails positioned along the side edges of said recess for adjusting the width of the conveying surface, and a pressure plate positioned over a portion of the conveying surface and said saw blades in parallel spaced relation, longitudinal ribs on the undersurface of said plate for precluding rotation of the buns when in engagement with said saw blades, and a dividing bar secured to the undersurface of said plate for forming two equal longitudinal paths under the plate, said bar separating the buns during the slicing operation.

3. A bun slicing machine comprising a frame, an elongated conveyor mounted on said frame having a horizontal conveying surface extending longitudinally of the frame, a pair of saw blades extending inwardly over the conveying surface for slicing opposite edges of a pair of buns passed between the saws, means for adjusting the

distance between the saw blades, means for adjusting the vertical position of the saw blades, and independent drive means for said saw blades and conveyor, and a pressure plate positioned over a portion of the conveying surface and said saw blades in parallel spaced relation, longitudinal ribs on the undersurface of said plate for precluding rotation of the buns when in engagement with the saw blades, said drive means for said blades including a vertically disposed motor for each blade, a bracket for each of said motors, an adjusting screw extending vertically through the frame for engagement with both said brackets, and an operating handle on said adjusting screws for raising and lowering the position of said saw blades in relation to the conveying surface thereby adjusting the position of the slit in the buns, said means for adjusting the distance between the saws including a transverse rod

having oppositely threaded end portions for threaded engagement with the bracket on each motor for said saw blades, an operating knob on the end of said rod for rotating said rod thereby moving the motors and saw blades simultaneously and transversely of the frame thereby adjusting the distance between the saw blades and adjusting the depth of the slit in the buns.

References Cited in the file of this patent

UNITED STATES PATENTS

2,347,007	Tod	Apr. 18, 1944
2,361,615	Elrod	Oct. 31, 1944
2,669,269	Schmidt	Feb. 16, 1954
2,673,583	Skog	Mar. 30, 1954
2,710,637	Fish	June 14, 1955