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[54] **APPARATUS FOR PACKAGING INDIVIDUAL SLICES OF CHEESE**

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[52] **U.S. Cl.** **53/180,** 99/178

[51] **Int. Cl.** **B65b 25/06**

[58] **Field of Search** ..... 53/28, 180, 14, 133; 99/178, 171 R, 171 S, 171 C, 174

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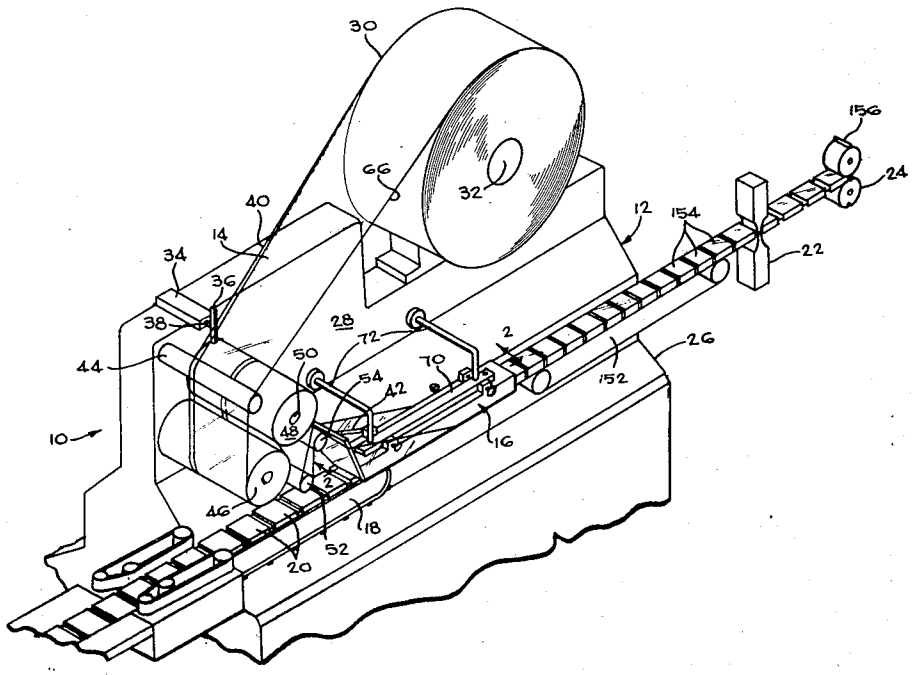
[57] **ABSTRACT**

Apparatus for packaging articles such as slices of cheese or the like in individual flexible packages by advancing a flexible wrapping material and a series of articles to be wrapped into a wrapping station which causes the wrapping material to surround the articles to form a continuous tube after which the individual packages are sealed and severed. The apparatus forms a cuffed edge on one edge of the wrapping material and disposes the opposite edge of the wrapping material closely adjacent one edge of the cheese slice to effect an easy opening package which does not damage the article during opening.

2 Claims, 8 Drawing Figures



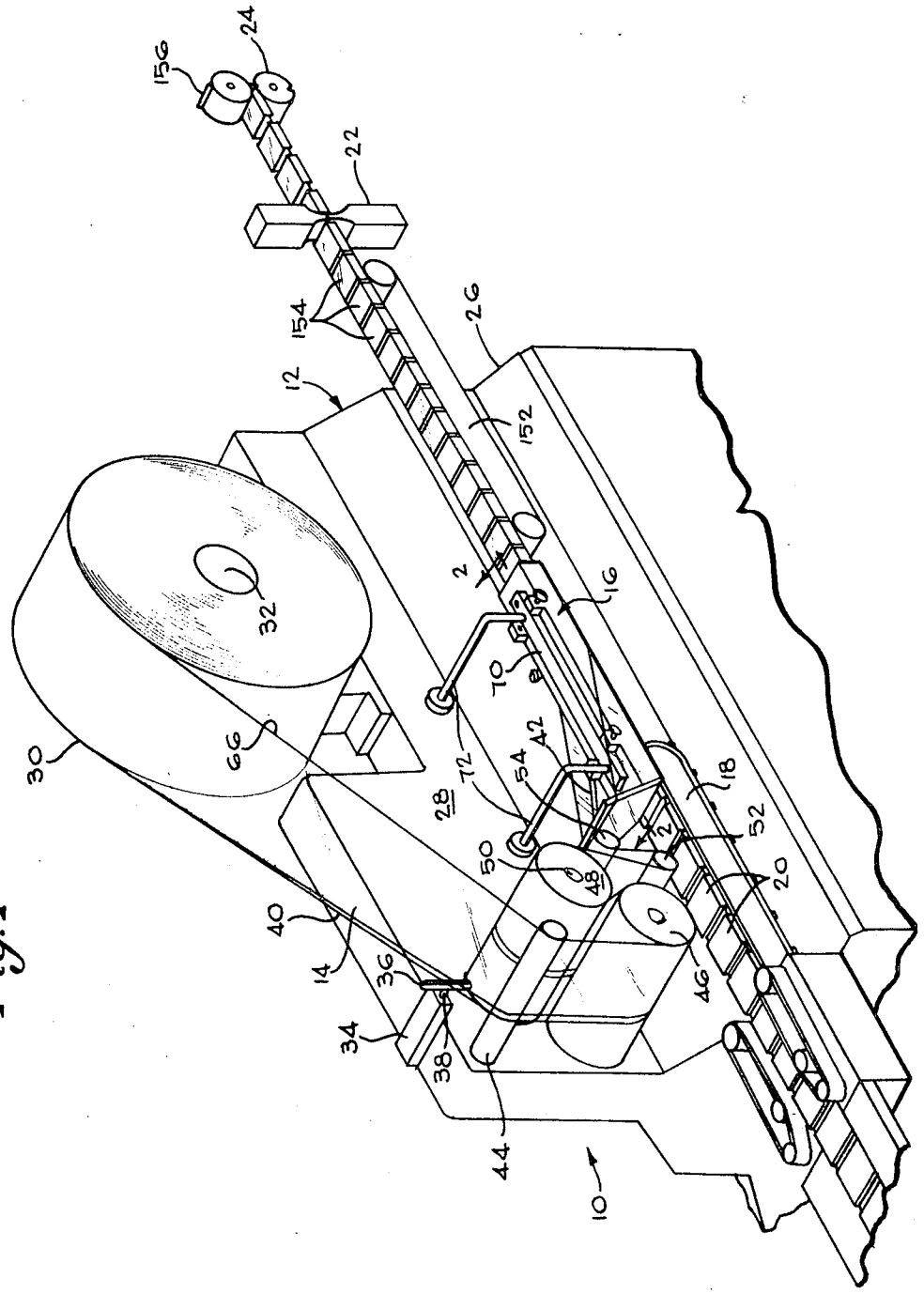


Fig. 1

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Fig.1a

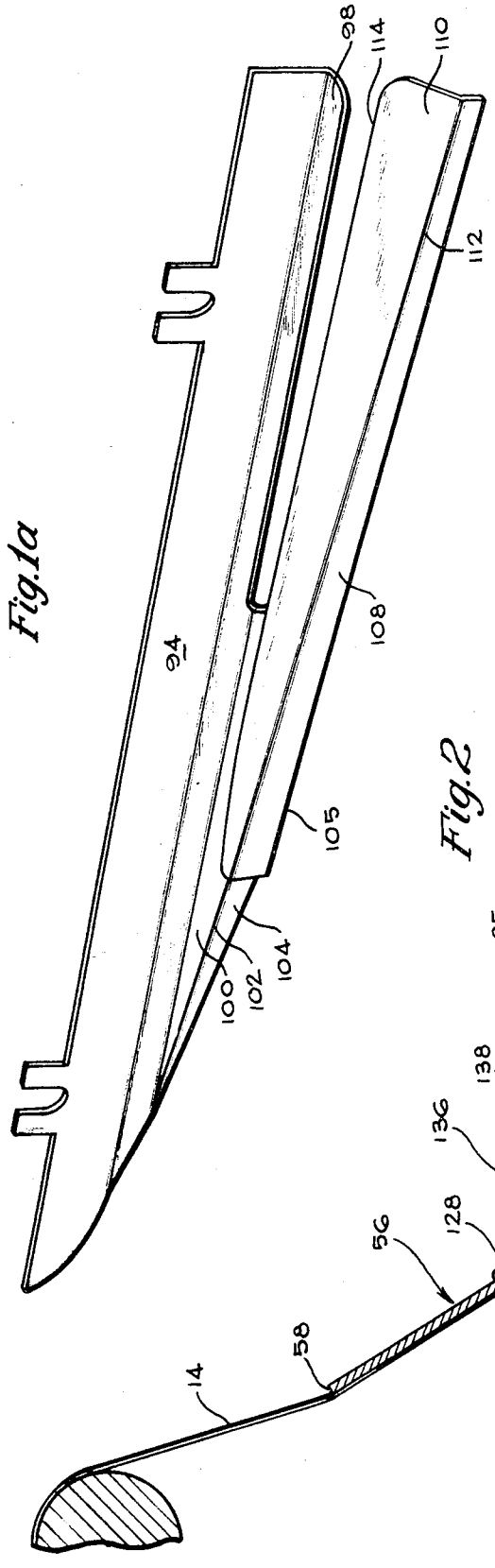
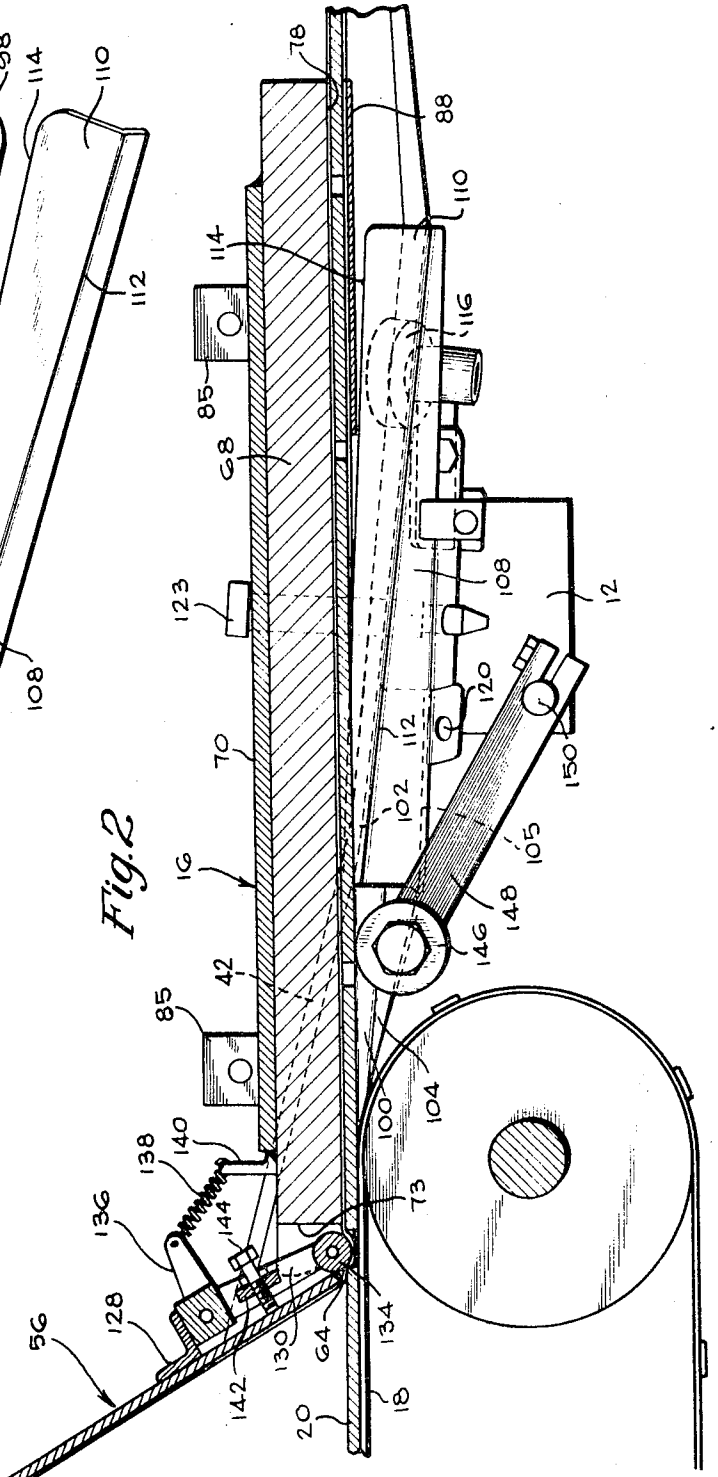


Fig.2



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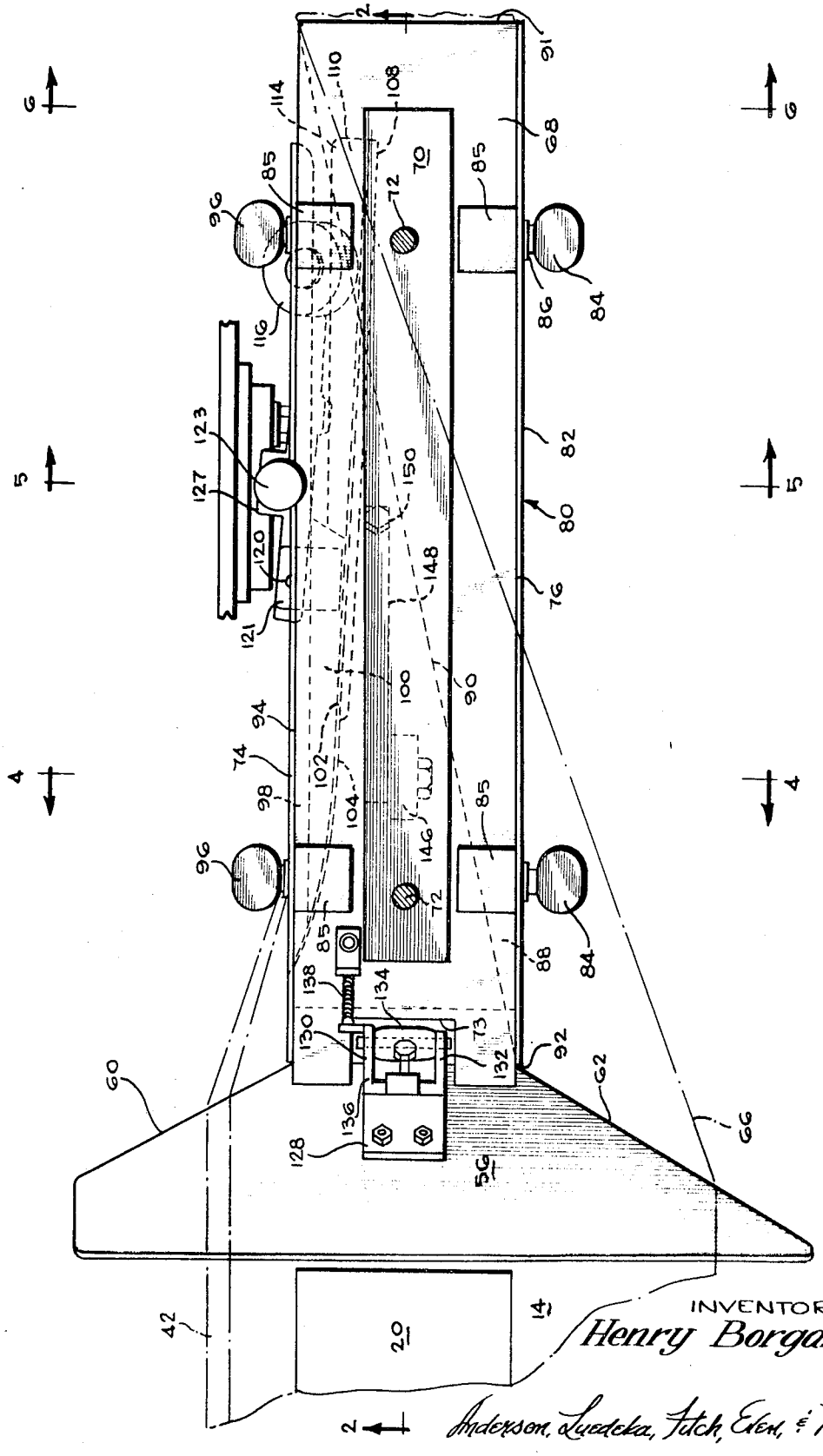

Fig. 3

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Fig. 4

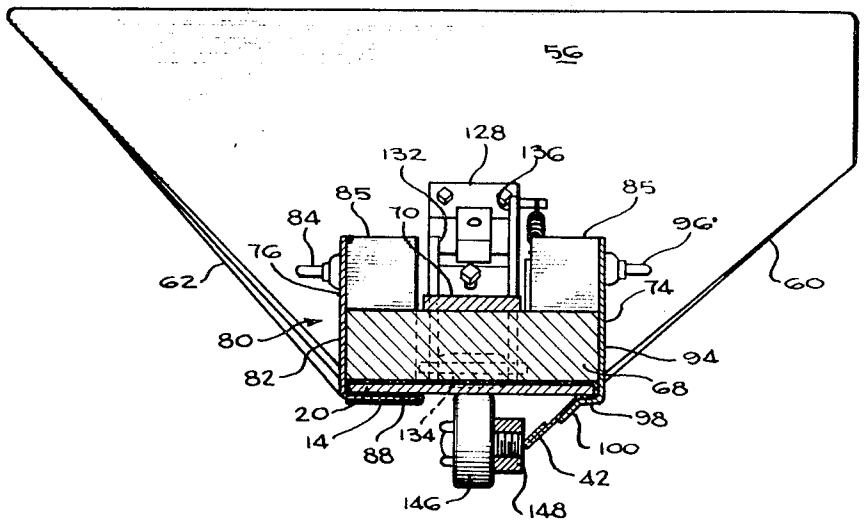


Fig. 5

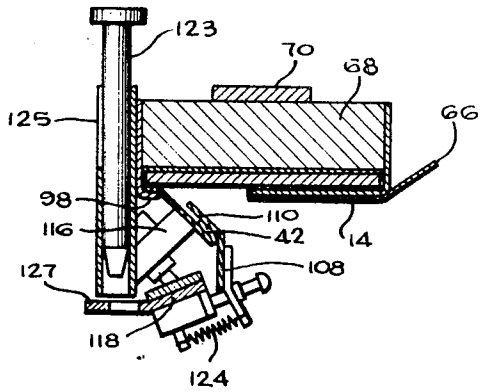


Fig. 6

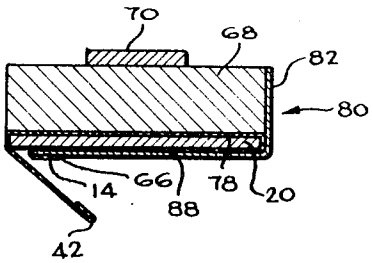
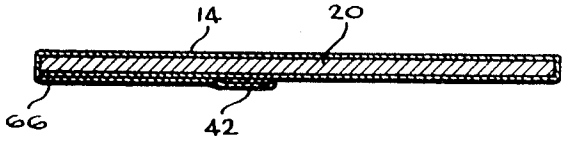


Fig. 7



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APPARATUS FOR PACKAGING INDIVIDUAL SLICES OF CHEESE

The present invention is directed to a method and apparatus for packaging food products such as cheese or the like. More specifically, the invention is directed to a method and apparatus for packaging single slices of cheese in individual flexible packages.

Sliced cheese products are commercially packaged either in single slice form or in multiple slices stacked together. In the single slice form, the package completely surrounds the slice so that it may be stacked with other slices without adjacent slices coming into contact and sticking. In addition to the freedom from sticking together of the slices, the chief advantage of the single slice package lies in the preservation of freshness of each slice of cheese until it is used by the consumer.

As the use of single slice packages of cheese has become more prevalent in the marketplace, the need has become more apparent for a packaging method which is susceptible to mass producing a reliable sealed package for each slice of cheese while permitting ease of opening when it is desired to remove the cheese from the package. The prior art has utilized several methods of wrapping slices of cheese in the single slice package form. Each of the methods employed has suffered some limitation, either in difficulty in opening, improper sealing or damage to the cheese slice in the course of opening.

The principal object of the present invention is to provide an improved method and apparatus for wrapping single slices of cheese or the like. This and other objects of the invention are more particularly set forth in the following detailed description and in the accompanying drawings in which:

FIG. 1 is a perspective view of an apparatus embodying the present invention;

FIG. 1*a* is a perspective view of the portion of the forming device engaged by the cuffed edge of the wrapping material;

FIG. 2 is a fragmentary sectional view of the apparatus taken along the line 2—2 of FIG. 1;

FIG. 3 is a plan view of the portion of the apparatus shown in FIG. 2;

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

FIG. 5 is a sectional view taken along line 5—5 of FIG. 3;

FIG. 6 is a sectional view taken along line 6—6 of FIG. 3; and

FIG. 7 is a sectional view of a product wrapped in accordance with the present invention.

The invention is shown in the drawings for purposes of illustration embodied in an apparatus **10** including a frame **12** on which a roll **30** of transparent wrapping material **14** is mounted. The wrapping material **14** is fed into a forming device **16** over a series of rolls. At the same time, a conveyor **18** feeds a continuous row of spaced, aligned precut cheese slices **20** along a horizontal path into the forming device. The material is brought into contact with the upper surface of each cheese slice **20** as it progresses from left to right in FIG. **1** and is wrapped around and under the cheese slice to form a continuous tube (FIG. **7**) surrounding the spaced cheese slices as they emerge from the forming device. The cheese then passes to a sealer **22** and cutter **24** where the tube is sealed transversely along the spaces between the consecutive slices and then is severed along the seals to form separate packages.

The frame **12** supports all of the operating elements of the machine and generally consists of a base portion **26** for housing the power source and gears and an upright wall **28** for externally mounting the various components of the packaging apparatus. The continuous sheet of flexible material **14** is mounted on a supply roll **30** which is rotatably mounted on a spindle **32** which extends horizontally from the vertical wall **28** of the apparatus above the forming device **16.**

As the flexible material unwinds from the top of the supply roll it progresses along a straight path adjacent to the frame **12** of the apparatus and past a cuff folder **34** mounted on the wall **28** of the frame to deflect one edge of the sheet. The cuff folder includes a stiff smooth metal finger **36** which is secured to the outer end of a rod **38** extending horizontally from a bracket on the top of the vertical wall **28.** The rod extends into a hole in the bracket where it is secured adjustably as by a set screw (not shown). The spacing of the finger from the wall and its angular position about the rod thus can be adjusted as desired to obtain the desired folding of the edge of the flexible strip to form a cuff **42.** The finger **36** is positioned so that it extends into the normal path of and engages the edge **40** of the sheet of flexible material **14** nearest the frame **12** in such a manner that it causes the edge of the material to fold back upon the main sheet in overlapping fashion. Since the sheet of flexible material **14** is under some tension the folding caused by the cuff folder assembly **34** is maintained for a sufficient distance so that the cuff **42** remains in the flexible material until it reaches an idler roll **44** positioned just past the cuff folder assembly **34.**

The deflection caused by the cuff folder assembly **34** on the edge **40** of the flexible material causes a tapering effect so that the cuff begins forming just after the flexible material leaves the supply roll **30.** The cuff **42** is gradually formed until it reaches its full width at the point of contact with the finger **36.** The edge **40** is caused to fold over the flexible material so that when the underside of the material makes contact with the idler roll **44** a crease is formed holding the cuff in position for the remainder of the wrapping operation. In other words, the edge **40** of the sheet of flexible material **14** progresses from a plane at the end of the supply roll along an angle until it reaches the cuff folder assembly **34.** Then, upon reaching the idler roll **44,** the edge again progresses in a plane with the completely formed cuff **42** constituting one new edge of the flexible material **14** as can be seen from FIG. **1.**

From the first idler roll **44,** the flexible material passes over a series of rollers before advancing to the forming device **16.** From the idler roll, the flexible material progresses downward until it contacts the periphery of a pinch roller **46.** The pinch roller is also mounted with its axis parallel to that of the idler roll and is positioned just below the idler roll. Contact is maintained with the surface of the pinch roller **46** around approximately 270° of its periphery so that, as the flexible material leaves the surface of the pinch roller, it is traveling upwardly toward a drive roller **48.**

The drive roller **48** is also mounted on the vertical wall **28** of the frame for rotation about a horizontal axis parallel to the axes of the other rollers. The drive roller is carried on a drive shaft **50** journalled in the vertical

wall of the frame and driven by a suitable motor and gears (not shown). After passing around the drive roller the continuous sheet of flexible material is passed around two additional idler rolls **52, 54** having their axes similarly disposed in parallel relationship to the other rollers. During the passage through all of the rollers just described, the cuff **42** formed along one edge of the flexible material is maintained at a constant width by tension. After traveling over the top of the last idler roll **54**, the flexible wrapping material advances to the forming device **16** for wrapping around the respective cheese slices.

The forming device **16** wraps the flexible material **14** around the cheese slices **20** to form a long tube with the slices in spaced aligned relationship. The material and cheese are brought into the inlet end of the device and contact each other with the midportion of the wrapping material contacting the upper surface of each slice. As the contact is completed, the slice and wrapping material enter the forming device and support of the slice is gradually transferred from the inlet conveyor to the material and the forming device.

The forming device **16** has no bottom wall at the inlet end; however, a bottom wall forms gradually in the direction of product flow and engages the wrapping material to form the tube. As each slice progresses, the uncuffed edge **66** of the wrapping material is progressively folded under the slice until it contacts all except a small portion of the underside of the slice. At the same time, the cuffed edge **42** of the wrapping material is folded around the edge of the slice and is held taut at an angle below the underside of the slice until the uncuffed edge **66** is in contact with the slice. The forming device then folds the cuffed edge into overlapping relation with the uncuffed edge on the underside of the slice. The structure of the forming device for accomplishing this operation is described below.

Moving in the direction of product flow, the inlet or leading end of the forming device **16** is made of a flat sheet of metal called a forming face **56** (FIGS. **2** and **3**). The forming face is of trapezoidal configuration and functions to keep the sheet of flexible material smooth and to initiate folding for the wrapping operation. The forming face is oriented at approximately 45° to the horizontal. The upper edge **58** which first contacts the flexible material is parallel to the horizontal and is considerably wider than the cuffed sheet of flexible material **14** to contact the entire width of the material.

Extending downwardly from the ends of the top edge **58** of the forming face **56** are two side edges **60, 62** which converge until they are spaced apart at their lower ends a distance equal approximately to the width of a cheese slice and substantially less than the width of the flexible material **14**. The lower edge **64** of the forming face extends horizontally between the lower ends of the side edges and is spaced a short distance above the slice conveyor **18** near its end. The flexible material is not centered on the forming face. Rather, the uncuffed edge **66** farthest from the frame **12** reaches the tapered edge of the forming face first and begins to taper inwardly sooner than the corresponding point on the cuffed edge **42**. The location of the flexible material on the forming face assists in the folding of the uncuffed edge **66** under the cheese slice prior to folding the cuffed edge **42** into place.

Beyond the forming face **56** in the direction of product flow, (the right as viewed in FIGS. **2** and **3**) the forming device **16** comprises an elongated rectangular top block **68** which is suspended by a mounting plate **70** secured to the frame **12** by a pair of support arms **72**. (FIG. **3**). The width of the top block **68** is slightly greater than the width of the cheese slices **20** and, at its forward end, the block is secured to the lower edge portion of the forming face to support the face. The lower flat surface of the block lies in a horizontal plane which includes the lower edge **64** of the forming face and the upper flat surfaces of the cheese slices **20** on the conveyor **18**. Intermediate its side edges, the top block is formed with a notch **73** which opens toward the forming face to receive a pressure roller **134**, described hereinafter, for pressing the wrapping material into contact with the upper surface of the cheese slice. The sides **74** and **76** of the top block **68** are vertical and parallel to each other.

The portion of the wrapping device which causes the uncuffed edge **66** of the material to wrap around the cheese slice includes an angled plate **80** having a vertical portion **82** secured to one side **76** of the top block **68** by means of a pair of bolts **84** threaded into brackets **85** secured to the top of the top block. The vertical portion **82** of the angled plate **80** includes vertically oriented slots **86** which receive the bolts **84** and permit vertical adjustment of the plate.

A horizontal shelf **88** extending beneath the top block **68** is integrally formed on the lower extremity of vertical portion **82** of angled plate **80** so that it adjusts vertically therewith. As is best seen in FIG. **3**, the inner edge **90** of the horizontal shelf **88** moving in the direction of product flow, that is, from left to right, begins at an intersection with the vertical portion **82** at the lower leading edge **92** thereof. At this point, a chamfer is provided to assist smooth movement of the flexible material into the forming device. The edge then tapers across the bottom of the top block and toward the side **74** progressing in the direction of product flow to form a triangular configuration which terminates just short of the side **74** at a rear edge **91** normal to the vertical portion **82**.

The portion of the device (FIG. **4**) for causing the cuffed edge **42** to wrap around each cheese slice **20** includes a vertical plate **94** attached to the opposite side **74** of the top block **68** by means of a pair of bolts **96** threaded into other brackets **85** on the top block **68**. A pair of vertical slots (FIG. **1***a*) in the plate **94** receive the bolts **96** and permit vertical adjustment of the plate **94** (FIG. **4**) and the elements attached thereto. The leading edge of the vertical plate **94** is also chamfered up to the lower surface **78** of the top block **68** to assist in guiding the flexible material **14** into the forming device.

The bottom edge of the vertical plate **94** terminates in a narrow ledge **98** (FIGS. **1***a* and **3**) of substantially constant width which is integral with the plate **94** and forms a right angle therewith. The leading end of the ledge **98** is level with the horizontal shelf **88**, however, the ledge slopes slightly downward in the direction of product flow. As can best be seen from FIG. **3**, the plate **94** and the corresponding ledge **98** are not coextensive with the length of the shelf **88** but end considerably short of the end of the shelf.

Moving in the direction of product flow, the ledge **98** commences a short distance from the former face **56** and quickly curves out to its full width after which the edge of ledge **98** extends parallel to the vertical plate

94 for its entire length. The ledge 98 is divided into two portions for purposes of explanation. The first portion extends approximately one half of the length of the ledge and terminates in a flange 100 which angles downwardly from the edge of ledge 98 (FIGS. 3 and 4). The flange 100 is narrow at first and gradually tapers out to its greatest width at its far end halfway down the length of the ledge 98 in the direction of product flow. The lower edge 102 of the flange 100 follows a line which progresses both downwardly and away from the ledge 98 in the direction of product flow. Along the full length of such edge, the flange 100 merges with a vertical wall 104. Although this wall is disposed in a vertical plane, it is also disposed at an angle to the vertical plate 94 so that it progresses away from the plate in the direction of product flow. Adjacent its outermost end portion, to the right as viewed in FIG. 2, the wall 104 is connected by a cross partition 105 to a second vertical wall 108 parallel to the first wall 104 to form a narrow groove of U-shaped cross section which receives the cuff during the operation of the apparatus. At the top of the second vertical wall 108 (FIG. 1a) an angled extension 110 is formed which is inclined upwardly and back toward plate 94. The line 112 of intersection of the top of the second vertical wall 108 and the lower edge of the angled extension 110 runs downward and away from plate 94 in the direction of product flow. The angled extension 110 is so formed that the upper edge 114 is disposed essentially parallel to plate 94 and angles slightly downwardly from the plane of the ledge 98 and the shelf 88. The second vertical wall 108 of the U-shaped groove and the angled extension 110 extending above it each begin approximately halfway along the first vertical wall 104 and continue to the end of ledge 98 and in the direction of product flow. The leading end of the angled extension 110 is slightly flared to assist smooth movement of the flexible material 14 during the operation of the device.

A tightener wheel 116 is positioned under ledge 98 and is mounted for rotation of its outer surface against the underside of flexible material moving along the underside of the angled extension 110. The tightener wheel is located near the far end of the ledge 98 just before the product leaves the forming device. The wheel is mounted on the forming device for movement into and out of engagement with the underside of the angled extension 110. In the embodiment illustrated, this mounting is effected by an elongated arm 118 mounted at one end for pivotal movement about a pin 120 on a stationary bracket 121 on the forming device and paralleling the plane of the angled extension 110. The tightener wheel is rotatably mounted at the other end portion of the arm 118. When the apparatus is not in operation, the tightener wheel may be maintained out of contact with the wrapping material by means of a movable pin 123 (FIG. 5) slidably mounted in a sleeve 125 on the side of the forming device and adapted to enter an opening in a lug 127 on the side of the arm 118 to hold the wheel 116 in a non-use position.

The positioning of the tightener wheel axis of rotation may be made adjustable by means of a suitable swivel (not shown) which can be tightened or loosened for the adjustment. This swivel enables the operator to position the tightener wheel 116 so that the engagement with the wrapping material on the underside of the angled extension 110 is slightly skewed with the direction of product flow to provide a frictional component of force in a downward direction causing the material to tighten around the cheese. A spring 124 is affixed to the arm and urges the tightener wheel into contact with the material on the undersurface of the angled extension 110 when the pin 123 is out of engagement with the lug 127 during the operation of the apparatus.

Referring to the pressure roller 134 in the notch 73 in the center of the front edge of the top block 68 near the forming face 56, the mounting for the roller comprises a support bracket 128 on the forming face 56 near the middle thereof and a pair of support arms 130 and 132 pivotally mounted on the support bracket. The roller is rotatably mounted between the lower extremities of the two support arms 130 and 132 and is disposed in the notch 73 for engagement with the upper surface of the wrapping material. A lever arm 136 is rigidly attached to the support arm 130 and extends generally normal thereto. A coil spring 138 is secured to the end of the lever arm, and the opposite end of the spring is secured to a spring bracket 140 bolted on the top surface of the top block 68. A cross bar 142 extends between the two support arms 130 and 132 intermediate the ends thereof and carries an adjusting screw 144, the tip of which is in engagement with the forming face 56. The screw 144 permits adjustment of the precise position of the pressure roller 134 in the notch 73 and the roller is biased into this position by the spring 138. The pressure roller contacts the flexible material and causes it to adhere to the cheese 20 as it is entering the forming device 16. At the time that the pressure roller 134 presses the flexible material 14 into contact with the upper surface of the cheese 20, the cheese is still supported by the conveyor 18 described above.

Moving in the direction of product flow from the top pressure roller 134, a support roller 146 is provided at the underside of the cheese slices to assist in the transition of the slice from the conveyor 18 to the wrapping material in the forming device 16. As illustrated in FIGS. 3 and 4, the support roller 146 is mounted for rotation about an axis perpendicular to the direction of product flow and is located directly under the center line of the forming device 16 so that it will contact each slice of cheese 20 at the center of its underside as it leaves the conveyor. The support roller 146 is mounted on an arm 148 which in turn is pivotally mounted at 150 on the frame 12 (FIG. 2) and is biased by a spring (not shown) toward a position which places the support roller 146 just in contact (FIG. 4) with the underside of the slices of cheese 20 as they pass off the conveyor 18 and into the wrapping material in forming device 16 thus serving to prevent the sagging of the middle of the cheese slices 20 until the material is backed by the horizontal shelf 88 and ledge 98 to give the slice support during the remainder of the wrapping operation. The roller is located at a point just beyond where the support from the conveyor ceases and the shelf 88 and ledge 98 commence but ahead of where the shelf 88 is sufficiently wide to support the center of the cheese slice 20.

Returning now to the operation of the apparatus, the cuffed flexible material 14 first moves down under the forming face 56 in the manner described above. Since it is not centered on the forming face 56, corresponding points on the opposite edges of the material reach the angled side edges 60, 62 of the forming face at different points in time. The uncuffed edge 66, being the wider side of the flexible material relative to the center line

of the forming device **16**, reaches the angled edge **62** first and begins to move at an angle toward the centerline of the forming device. This movement is assisted by the edge of the shelf **88** and the chamfer referred to earlier at the leading edge **92** thereof. The shelf serves to fold the material causing it to contact the underside of the incoming slice of cheese **20** progressively as it moves.

As the cheese slice **20** and wrapping material **14** advance together without slippage, the edge **90** of the shelf **88** acts on the remaining portion of the flexible material **14** causing it to gradually progress across the bottom of the cheese slice. This progression is shown in detail in FIGS. **4, 5** and **6.** The cheese slice progresses through the forming device **16** until the shelf **88** has caused the uncuffed edge portion to be wrapped underneath the cheese slice and in contact with essentially the entire underside thereof. The original distance from the uncuffed edge of the flexible material at the angled edge **62** of the forming face to the plane of the side **76** of the top block **68** is just less than the width of a slice of cheese **20.** This distance is also the same or slightly less than the distance from that side of the top block to extreme point of shelf **88** at the right in FIG. **3.** Therefore, the shelf **88** has the effect of wrapping the flexible material **14** across substantially the entire underside of the cheese (FIG. **7**).

In the operation at the opposite side of the forming device, a point on the cuffed edge **42** of the flexible material **14** corresponding to a point on the uncuffed edge reaches the other side edge **60** of the forming face **56** later due to its relative nearness to the center line of the forming device **16.** After reaching this side edge, the cuff **42** begins to angle toward the center line of the forming device **16** (FIG. **3**). The movement toward the center line is assisted by the tapered beginning of the ledge **98** which engages the flexible material **14** and pulls the cuff **42** into the space formed by the first and second vertical walls **104, 108** and the related structure defined above.

As the slice of cheese **20** is received in the forming device, it progresses from the conveyor **18** to a point where its edge reaches the ledge **98** and makes contact with a very small area of the flexible material **14** on the ledge. As was mentioned above, the ledge **98** is tapered slightly downward in the direction of product flow and therefore the level of support provided by the ledge lessens as the support provided by the widening shelf **88** increases. To prevent sagging in the interim portion just after leaving the conveyor, the center of the slice passes over the support roller **146** as described earlier.

Some additional support is given by the adhesive tendencies of the flexible material **14** which has been pressed into contact with the top of the cheese slice by the pressure roller **134** before the slice leaves the conveyor. In the cross section shown in FIG. **4** taken generally through the axis of the support roller **146** and looking in the direction opposite to the direction of flow of the flexible material **14** and the slice **20,** it can be seen that the slice of cheese is in contact with the flexible material **14** across its entire top surface and across approximately one-quarter of its lower surface on the top of the ledge **88** of the angled plate **80** at one edge of the slice. The remaining support is supplied by the support roller **146** at the center of the slice and the wrapping material on the ledge **98** which just supports the opposite edge of the cheese slice **20.** It can also be seen that at this point the cuff **42** has been drawn into a position angled below the cheese slice **20** and is held in that position by the flange **100** described above (FIG. **4**). The cheese **20** and wrapping material **14** progress together into the forming device **16** as the amount of support received from the shelf **88** increases.

In the section shown in FIG. **5** (taken looking in the direction of product flow), the cheese is supported approximately halfway across its underside by shelf **88** and the opposite edge is riding on the wrapping material on the ledge **98.** At this same time, the cuffed edge **42** has passed beyond the U-shaped groove formed by the first and second vertical walls **104** and **108** shown in FIG. **1***a* and described hereinabove but not visible in FIG. **5.** The walls act to hold the cuffed edge out of contact with the slice **20** at this point so that the wrapping of the edge **66** can be completed.

The progression of the cheese slice **20** is again illustrated in cross section in FIG. **6.** At this point, the cheese is supported by the wrapping material **14** on the shelf **88** almost entirely except for one edge which is unsupported having passed the end of the ledge **98** which is not visible in FIG. **6.** The flexible material **14** is almost completely wrapped around the cheese slice **20** and the material adjacent the cuff **42** has been contacted by the tightener wheel **116** which because of its skewed position in contact with the underside of the angled extension **110** caused the flexible material **14** to be put under tension causing a tighter wrapping of the material around the cheese slice. Again it is important to note that the operation of the forming device on the cuffed edge causes the overlap portion of the package to remain out of contact with the package until the opposite uncuffed edge is fully positioned under the cheese slice.

The cheese slice continues to progress through the forming device **16** until the end of shelf **88** is reached. At that point the cheese is almost completely surrounded by the flexible material **14** and the cuff **42** is no longer constrained by the forming device **16.** the cuff **42** is then brought upward into contact with the underside of the wrapping material **14** in overlapped fashion at a point approximately at the center of the cheese slice **20** (FIG. **7**). This operation is accomplished by means of a conveyor **152** shown in FIG. **1.** The tube of wrapping material with the enclosed cheese slices then progresses onto the sealing device **22.**

Referring to FIG. **1,** the sealing and cutting operations of the apparatus are shown schematically. The conveyor **152** is provided for supporting the longitudinal envelope of sheet material **14** and the individual cheese slices **20** after leaving the forming device **16.** Upon reaching the sealing station, the portions **154** of the envelope between the individual slices of cheese are pressed against each other and a light heat seal is applied. This is accomplished by the flattening and sealing device **22** which may be of a suitable construction known in the art.

After passing the sealing device, a pair of rotary wheels **24** are positioned to engage opposite sides of the moving envelope. These wheels operate not only to draw the envelope of sheet material through the forming device and the sealing device **22,** but also carry cutter blades **156** thereon for cutting the sheet material down the center of each of the heat seals made by the sealing device. The result is a plurality of individual

cheese packages as illustrated in cross section in FIG. 7. As mentioned in connection with the discussion of such packages, the light heat seal is sufficient to hold the cuffed edge 42 of the sheet material securely against the underside of the package which it overlaps yet the seal breaks readily when such overlapping portions are separated for easy unwrapping.

From the foregoing discussion, it will be apparent that the method of the invention provides a successful way in which limp individual slices of cheese may be wrapped without incurring damage. The individual slices are wrapped while cool enough so as not to become bonded to the wrapping material, nor are they compressed in the sealed areas to present an unsightly appearance. The apparatus of the invention is capable of high production rates and provides careful and precise handling of the cheese slices so that they incur no damage and the wrapping is carried out accurately and quickly. Various embodiments of the invention and modifications thereof other than those shown and described herein will be apparent to those skilled in the art from the foregoing description and are intended to fall within the scope of the accompanying claims.

I claim:

1. Apparatus for wrapping individual slices of cheese or the like including means for conveying a plurality of said slices in spaced aligned relationship along a first predetermined path, means for feeding a continuous sheet of flexible wrapping material along a second predetermined path, a portion of said second predetermined path being coextensive with a portion of said first predetermined path, cuffing means for folding one edge of said sheet back on itself to form a cuff, wrapping means located along the coextensive portions of said paths for causing said sheet to wrap around said slices successively to form a tube containing the slices in spaced relationship, said wrapping means further causing said cuff to overlap the uncuffed edge of said sheet in overlying relationship, and means for sealing said sheet transverse to its longitudinal dimension between adjacent slices to form a chain of individual packages, said wrapping means comprising in combination means for placing the central portion of said sheet in contact with a first face of each of said slices; a horizontal tapered shelf affixed generally on one side of said placement means; and means defining a groove and angled guide surfaces affixed generally on the other side of said placement means, said shelf being adapted to engage a portion of said sheet adjacent the uncuffed edge and to progressively fold same against and substantially covering the second face of each of said slices as they are conveyed so that said uncuffed edge lies parallel to and closely adjacent a first of two opposed side edges of each of said slices, and said means defining said groove and angled surfaces being adapted to receive and to guide the cuffed edge and adjacent portion of said sheet, said means defining said groove and angled surfaces being of a form that generally progresses at an angle both away from said second face of said slices and toward the second of said side edges of said slices in the direction of slice movement so as to restrain said cuffed edge and the sheet portion adjacent thereto from folding into overlying contact with said uncuffed edge and the sheet portion adjacent thereto until said uncuffed edge and adjacent sheet portion are fully positioned against said slices.

2. The apparatus defined in claim 1 wherein said wrapping means further comprises a block overhead of said coextensive paths and adjacent said placement means in the direction of slice movement, said block having two opposed vertical sides, said tapered shelf being affixed to a first of said vertical sides of said block and extending horizontally below and tapering toward the second of said sides of said block in the direction of slice movement for causing said uncuffed edge and the adjacent portion of said sheet to progressively fold under said slices substantially across the entire underface of each of said slices; wherein said groove is U-shaped in cross section; wherein said means defining said groove and angled surfaces further comprise formed mounting plate means affixed to said second vertical side of said block, a generally horizontal ledge integral with said plate means and extending at right angles thereto under a portion of said block, flange means extending at an angle both downwardly and away from said plate means in the direction of slice movement, said flange means being integral with a leading portion of said ledge, a vertical first side wall integral with and extending downwardly from said flange, a second side wall parallel to said first side wall and being longer in the direction of slice movement than said first wall and joined thereto across the bottom of portions of said walls by cross partition means, and an angled surface integral with and extending from the top of the entire length of said second wall, said angled surface being inclined both upwardly and back toward said plate means to guide and restrain the portion of said sheet adjacent said cuffed edge; and wherein said means defining said groove and angled surfaces is shorter than said tapered shelf.

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