

[54] **METHOD AND APPARATUS FOR COVERING OPEN ENDED CONTAINER BODIES**

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[22] Filed: **March 26, 1971**

[21] Appl. No.: 128,360

[52] U.S. Cl. 53/39, 53/329, 53/373,
53/389

[51] Int. Cl. B65b 7/00, B65b 41/12, B65b 51/04

[58] **Field of Search**.....53/35, 37, 39, 41, 112 R,
53/112 A, 373, 183, 328, 329, 386

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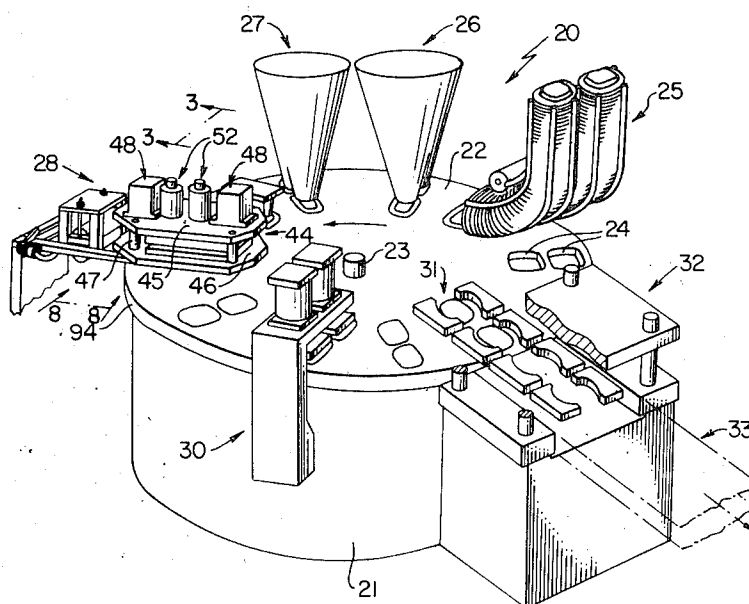
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[57] **ABSTRACT**

Method and apparatus for covering a product filled and open ended container body wherein an annular knife is carried by a stationary frame and a blanking die is also carried by the frame so that relative movement between the blanking die and the knife can compress an unblanked portion of a cover strip between the same to cut a cover member therefrom. A transfer device is also movably carried by the frame and has means for holding the cut cover member as the cover member is cut from the strip so that the transfer device can transfer the cut cover member from adjacent the knife to the open end of the container body. As the transfer device is disposing the cover member on the open end of the container body, a securing device tack seals part of the cover member to the open end of the container body. The transfer device has means for forming a slight depression in the cover member inboard of the open end of the container body for cover member expansion purposes as the transfer device places the cover member on the open end of the container body.

23 Claims, 14 Drawing Figures



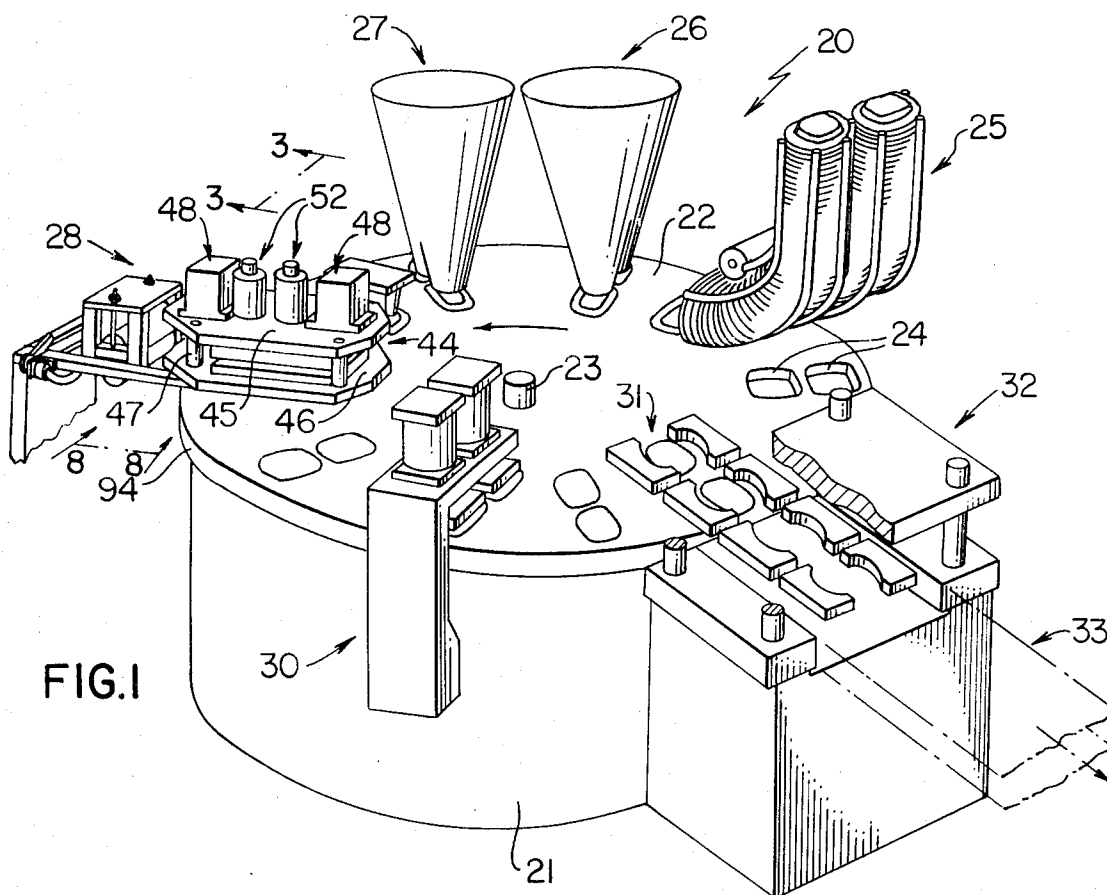


FIG. 1

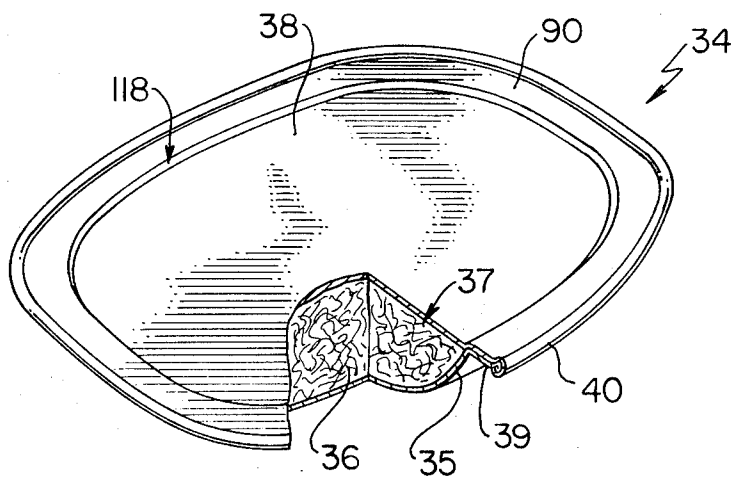


FIG. 2

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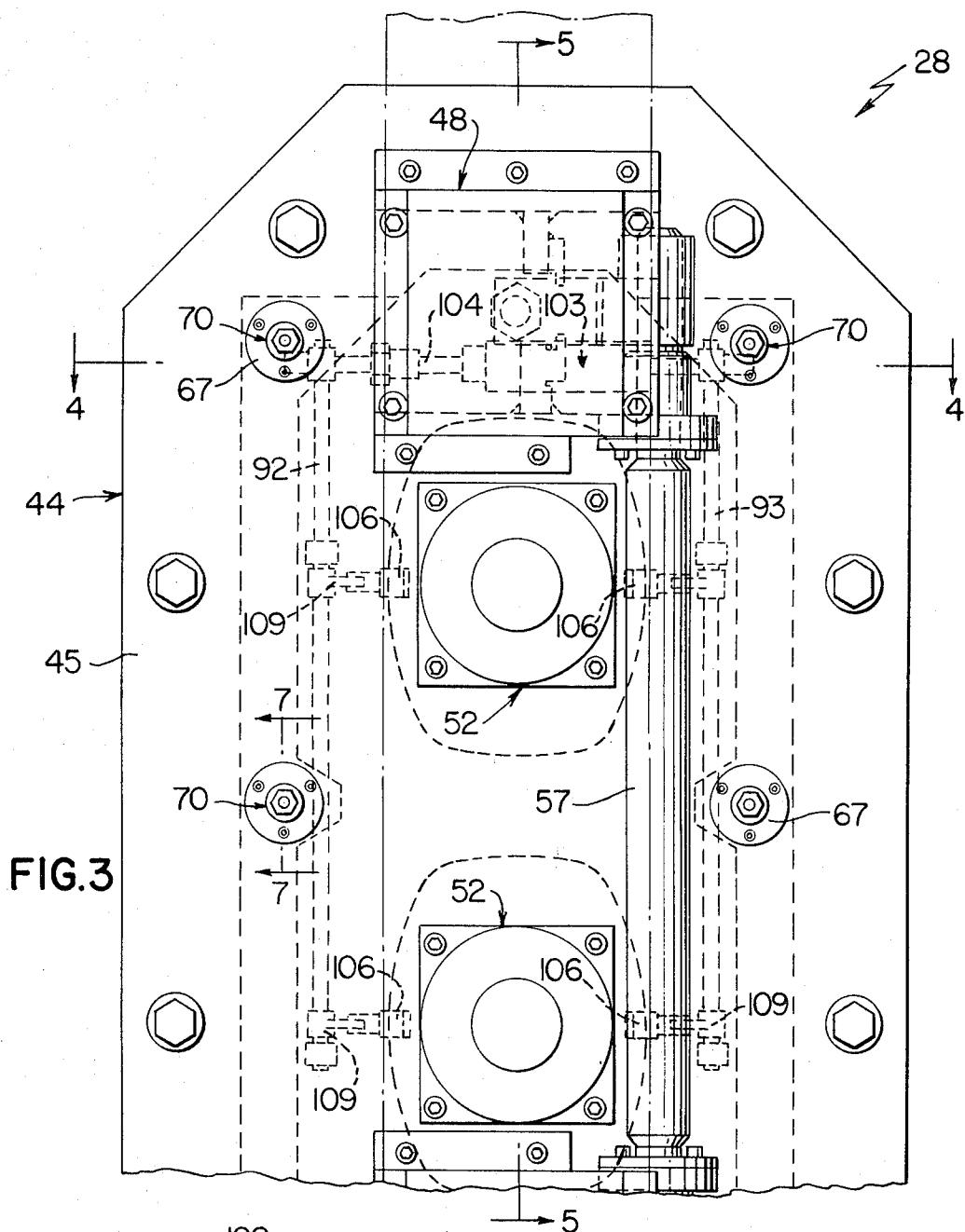


FIG. 3

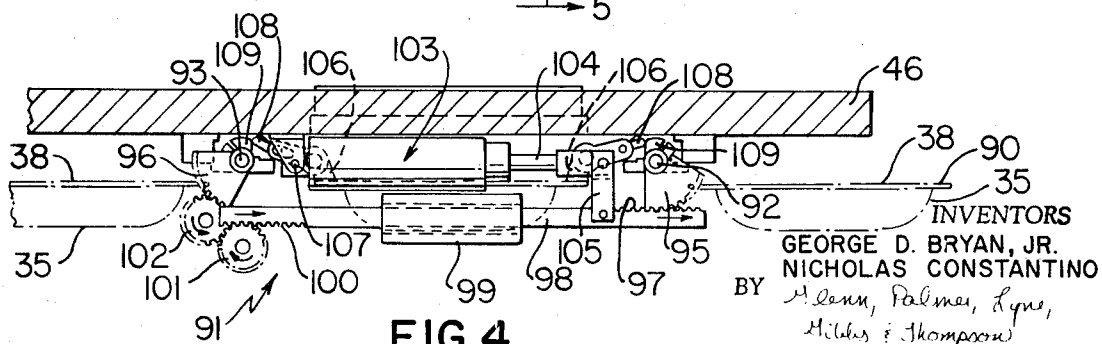


FIG. 4

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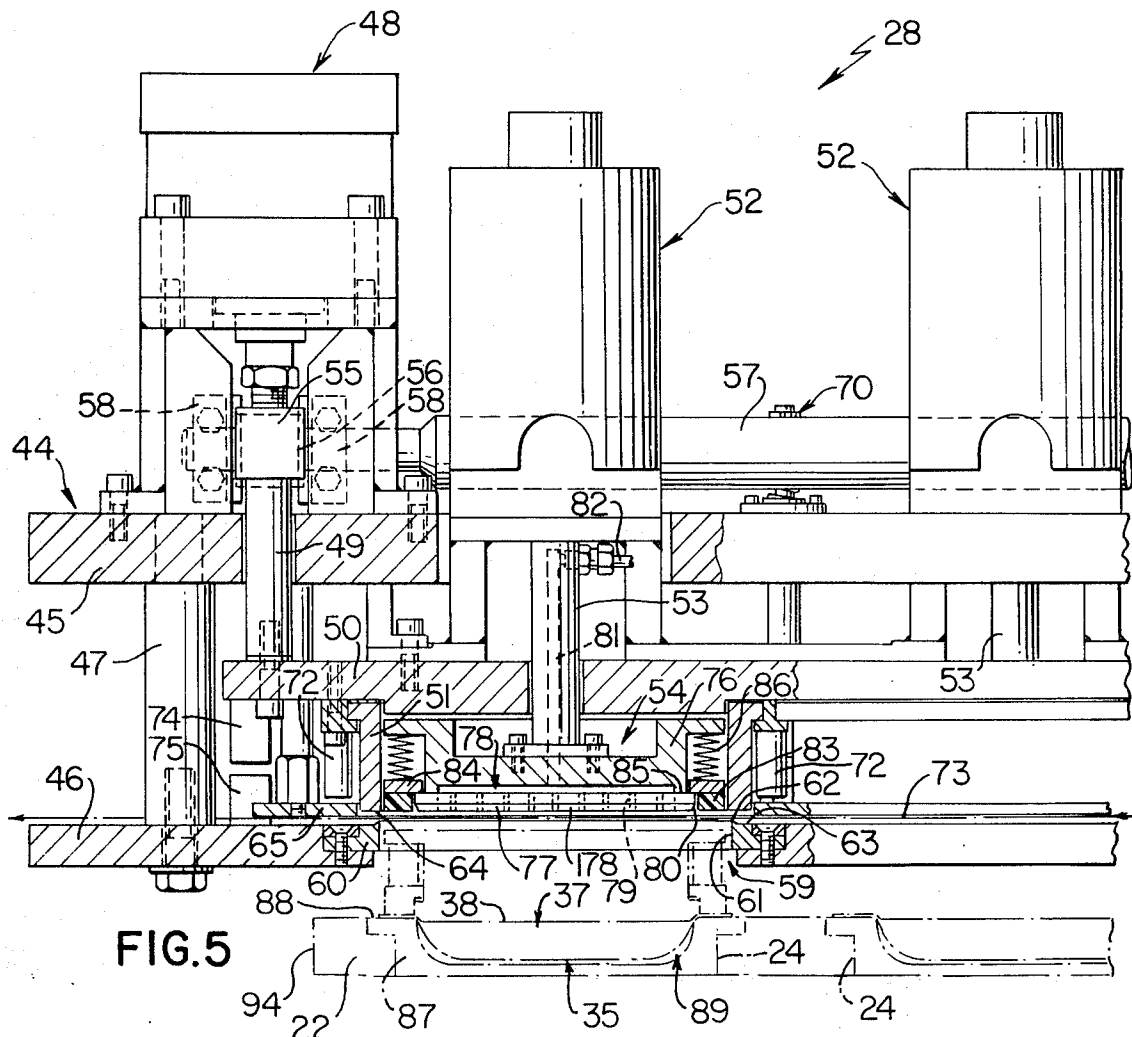


FIG. 5

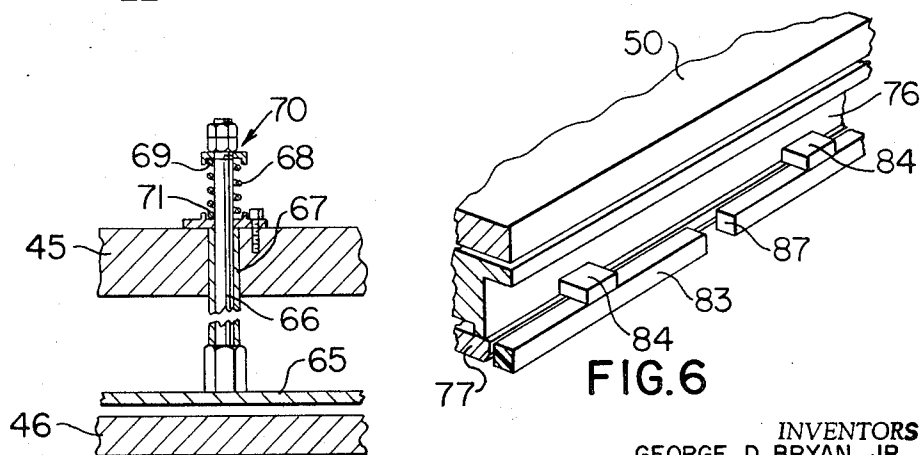


FIG. 6

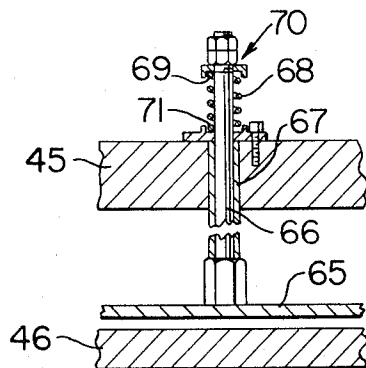
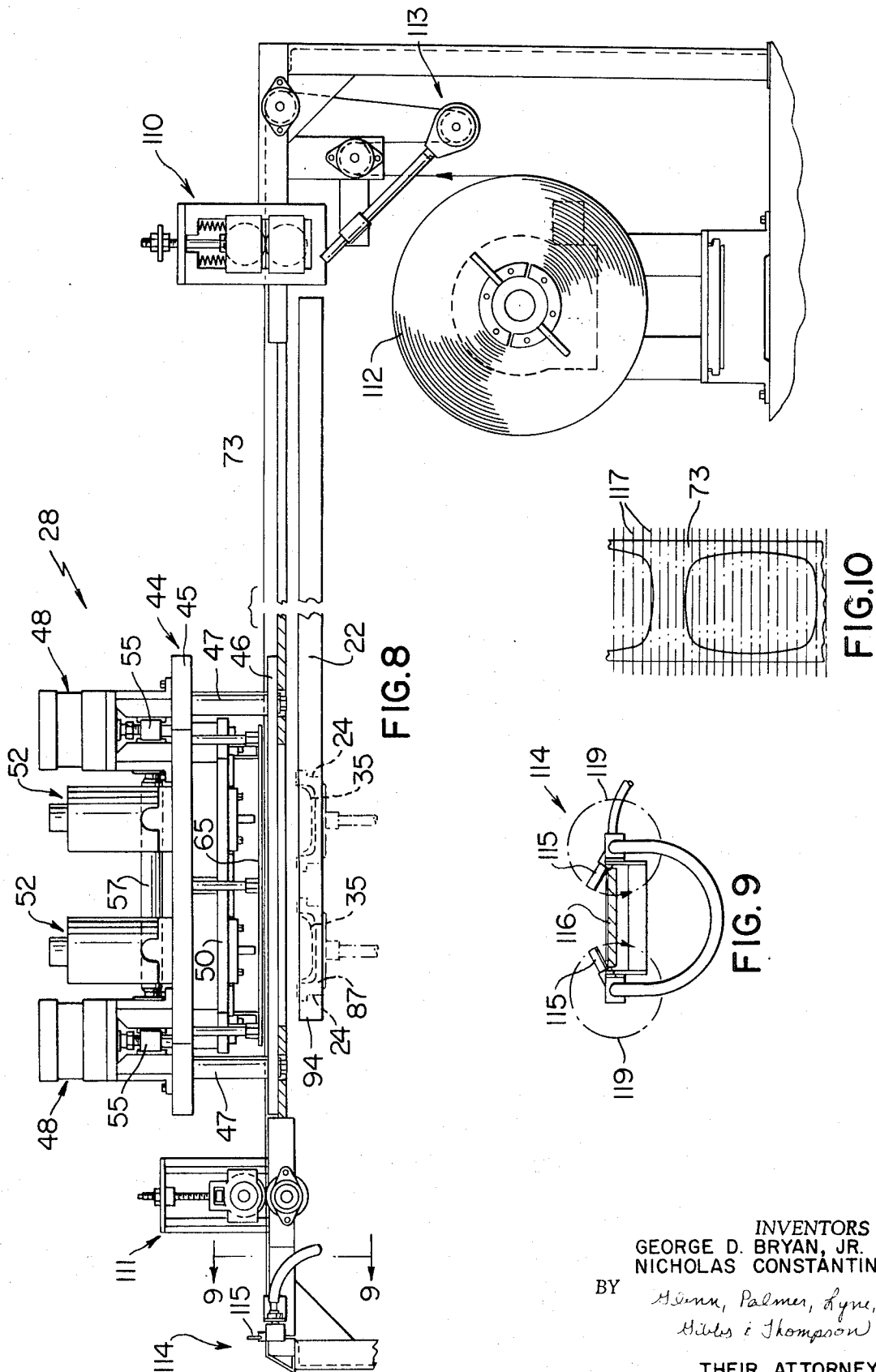


FIG. 7

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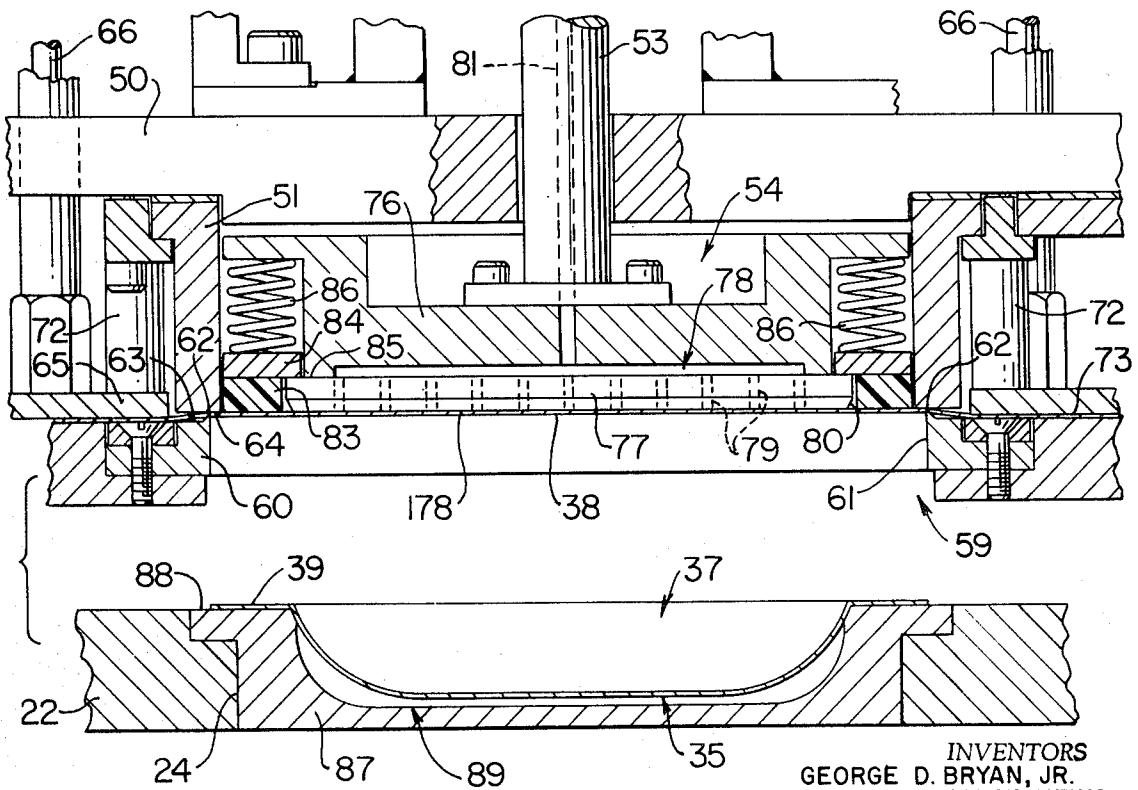
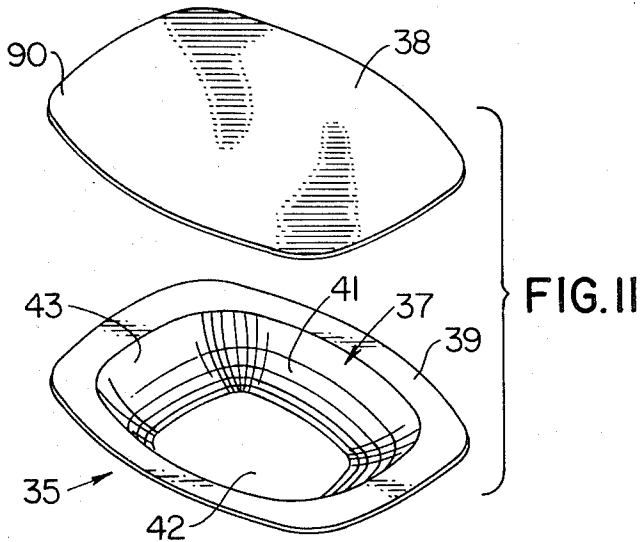
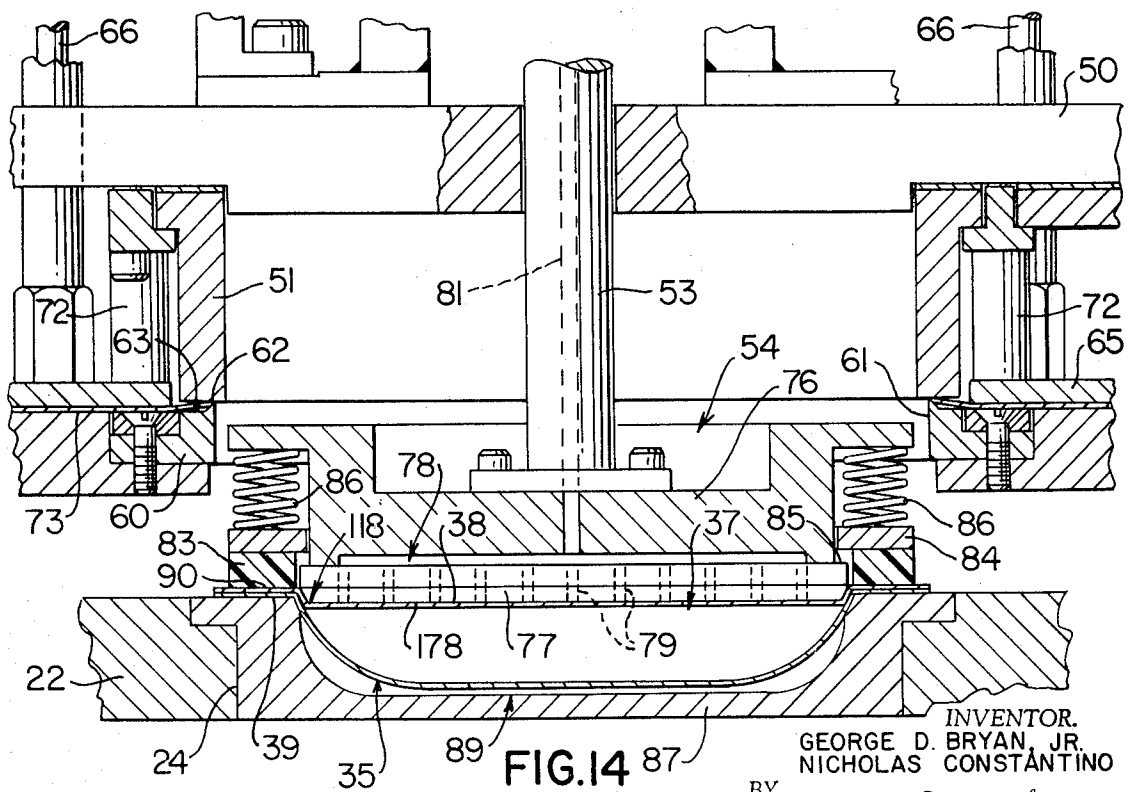
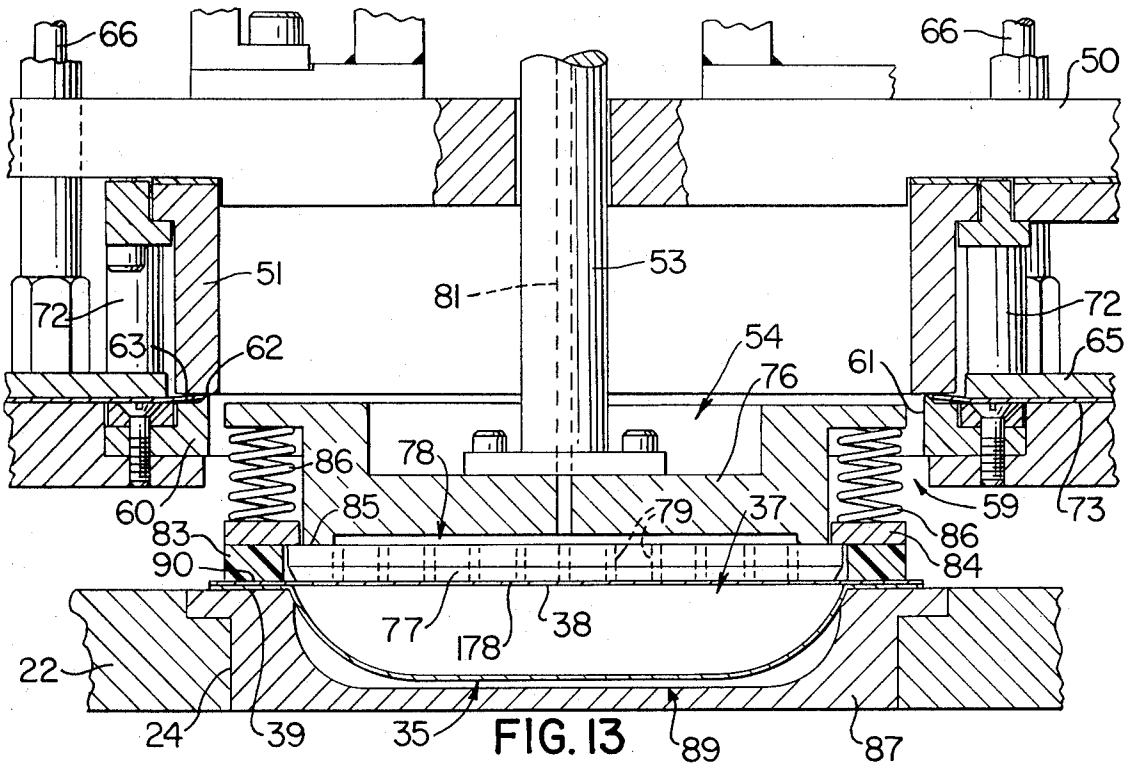


FIG. 12

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METHOD AND APPARATUS FOR COVERING OPEN ENDED CONTAINER BODIES

BACKGROUND OF THE INVENTION

In the automatic filling and subsequent sealing of food containers and the like, suitable apparatus can be provided for serially making cover members from a strip of material and, thereafter, serially transferring such cover members to the product filled container bodies so that the cover members can be subsequently secured in place to seal closed the container bodies.

SUMMARY

This invention provides an improved method and apparatus for serially making cover members from a cover member strip and securing the same to the open ends of product filled container bodies and the like.

In particular, one embodiment of the method and apparatus of this invention comprises a stationary frame carrying an annular knife and a cooperating blanking die. Means are provided for causing relative movement between the blanking die and the knife to compress an unblanked portion of a cover strip between the knife and the die to cut a cover member therefrom. A transfer device is movably carried by the frame and has means for holding the cut cover member as the cover member is cut from the strip so that the transfer device can transfer the cut cover member from adjacent the knife to the open end of the container body disposed at the station of the frame. Means are provided for securing a small portion of the cover member to the open end of the container body after the transfer device has formed a depression in the cover member inboard of the open end of the container body so that the cover member will remain in place on the container body and can be subsequently secured in place by other apparatus with the cover member being permitted to expand outwardly relative to the container body to compensate for excess pressure in the container body after the cover member has been completely sealed to the same.

While the various features of this invention are hereinafter described and illustrated as being particularly adapted for covering product filled container bodies or the like, it is to be understood that the various features of this invention can be utilized singly or in any combination thereof to provide article making and transfer apparatus for other devices as desired.

Therefore, this invention is not to be limited to only the embodiment illustrated in the drawings, because the drawings are merely utilized to illustrate one of the wide variety of uses of this invention.

Other details, uses and advantages of this invention will become apparent as the following description of the present preferred embodiment thereof in the accompanying drawings proceeds.

BRIEF DESCRIPTION OF THE DRAWINGS

The accompanying drawings show the present preferred embodiment of the invention, in which:

FIG. 1 is a perspective and schematic view illustrating a complete filling and sealing apparatus for container bodies, such apparatus including the cover member making and securing apparatus of this invention.

FIG. 2 is an enlarged perspective view, partially broken away, illustrating the completed container construction produced by the apparatus of FIG. 1.

FIG. 3 is an enlarged top view of the cover member making and securing apparatus of this invention as taken substantially in the direction of the arrows 3—3 of FIG. 1.

FIG. 4 is a cross-sectional view taken on line 4—4 of FIG. 3.

FIG. 5 is a fragmentary, cross-sectional view taken on line 5—5 of FIG. 3.

FIG. 6 is a fragmentary, perspective view illustrating part of the transfer device of FIG. 5.

FIG. 7 is a fragmentary, cross-sectional view taken on line 7—7 of FIG. 3.

FIG. 8 is a fragmentary, cross-sectional view taken substantially on line 8—8 of FIG. 1 with the supply roll feed means of the strip of material for making the cover member being disposed out of place from its normal position in the apparatus of FIG. 1.

FIG. 9 is a fragmentary, cross-sectional view taken on line 9—9 of FIG. 8.

FIG. 10 is a fragmentary top view schematically illustrating the scrap cut lines on the blank cover strip as produced by the scrap choppers illustrated in FIG. 9.

FIG. 11 is an exploded perspective view of the cover member and container body before the same have been secured together.

FIG. 12 is an enlarged, fragmentary cross-sectional view similar to FIG. 5 and illustrating the apparatus as the same initially cuts a cover member from the cover strip.

FIG. 13 is a view similar to FIG. 12 and illustrates the cover member being initially placed on the flange of the filled container body.

FIG. 14 is a view similar to FIG. 12 and illustrates the depression being made in the cover member as the same is being secured to the open end of the container body.

DESCRIPTION OF ILLUSTRATED EMBODIMENT

Referring now to FIG. 1, an automatic apparatus for filling and sealing container bodies with food products and the like is generally indicated by the reference numeral 20 and comprises a base or frame structure 21 rotatably carrying an indexible conveyor or table 22 adapted to be indexed by a rotatable shaft 23 so that container body receiving pockets 24 formed in the rotatable table 22 can be indexed in a counter-clockwise direction in FIG. 1 from a container body dispensing apparatus or station 25 to a first product filling station or apparatus 26, a second product filling station or apparatus 27, the cover member making and tack sealing station or apparatus 28 which forms the features of this invention, a cover member heat sealing station or apparatus 30 and a transfer station or apparatus 31 wherein the covered and sealed container bodies are transferred to a flange beading apparatus or station 32 for forming a curled annular bead about the filled and sealed container body whereby the completed container constructions are adapted to be dispensed from the beading apparatus 32 to a desired location by a conventional conveyor means 33.

The completed container construction made by the apparatus 20 of FIG. 1 is generally indicated by the

reference numeral 34 in FIG. 2 and comprises a container body 35 filled with suitable product means 36 and sealed closed at its open end 37 by a cover member 38 which is heat sealed to an annular flange 39 of the container body 35 that surrounds the open end 37 thereof and is together with the cover member 38 suitably curled or beaded at 40 by the beading apparatus 32 of FIG. 1 to strengthen the combined cover member 38 and annular flange 39 at the outer edge thereof.

However, the container body 35 as utilized in the pockets 24 of the table 22 when reaching the station 28 of this invention is the configuration illustrated in FIG. 11 wherein it can be seen that the annular flange 39 is originally substantially flat at the open end 37 of the container body 35 with the container body 35 having a bowl portion 41 defining a bottom wall 42 and an arcuate side wall 43 which is arcuate in any transverse cross section of the container body 35. The cover member 38 as illustrated in FIG. 11 comprises a flat sheet of material made by the apparatus 28 in a manner hereinafter described.

If desired, the cooperating container body 35 and cover member 38 can be made of metallic foil containing aluminum and having a coating layer of heat sealable material defining the inside surface of the container body 35 and cover member 38 so that the cover member 38 can be heat sealed to the flat flange 39 of the container body 35 to seal closed the open end 37 thereof.

Referring now to FIGS. 3 and 5, the cover member making and securing apparatus 28 of this invention comprises a stationary frame 44 adapted to be disposed over the rotatable table 22. The frame 44 comprises a pair of stationary frame plates 45 and 46 suitably secured together by post means 47. A pair of piston and cylinder arrangements 48 are carried by the frame plate 45 and respectively have piston rods 49 secured to a movable plate 50 carrying an annular blanking die 51 for a purpose hereinafter described, the movable plate 50, in turn, also carrying a pair of piston and cylinder arrangements 52 respectively having the piston rods 53 thereof interconnected to transfer devices 54.

Since each transfer device 54 for each pocket means 24 of the table 22 brought to the station 28 is identical in structure and operation, only one transfer device 54 will be described hereafter with the understanding that the description of the details and operation of the transfer device 54 applies to the other transfer device 54 of the apparatus 28 whereby it can be seen that the features of this invention can be utilized for forming one cover member or a plurality of cover members as desired for each stroke of the apparatus 28.

The first pair of piston and cylinder arrangements 48 for vertically moving the plate 50 of the apparatus 28 are synchronized together by the piston rods 49 respectively have racks 55 thereon which respectively mesh with gears 56 carried on the opposed ends of a shaft 57 rotatably mounted to the frame structure 44 by suitable bearings 58. In this manner, the piston and cylinder arrangements 48 are synchronized relative to each other to raise and lower the plate 50 in a uniform manner relative to the table 22 for a purpose hereinafter described.

The lower plate 46 of the frame 44 has a pair of openings 59 passing therethrough and respectively alignable with each pair of pockets 24 in the table 22 as the same are indexed under the apparatus 28 in a manner illustrated in FIG. 5. The plate 46 of the frame 44 carries a pair of annular knives 60 to overlap respectively the openings 59 as illustrated in FIG. 5 with each knife 60 having a cylindrical opening 61 passing therethrough and defining an outwardly directed knife edge 62 at the upper end thereof projecting above the upper flat surface 63 thereof for a purpose hereinafter described. Each knife edge 62 is alignable with a flat annular surface 64 formed on the blanking die 51 carried by the movable frame plate 50.

A stripper plate 65 is disposed between the frame plate 46 and the movable plate 50 and is operatively interconnected to the stationary frame plate 45 so as to move relative thereto as will be apparent hereinafter by a plurality of rods 66 interconnected to the stripper plate 65 in the manner illustrated in FIG. 7 and passing through suitable sleeve bearings 67 carried by the plate 45 and extending beyond the same whereby a compression spring 68 for each rod 66 has one end 69 bearing against an enlarged end 70 of the rod 66 and the other end 71 bearing against the frame plate 45 as illustrated.

In this manner, the compression springs 68 tend to maintain the stripper plate 65 in the position illustrated in FIG. 7 relative to the movable plate 50. However, the plate 50 carries abutments 72 that are engageable against the plate 65 so that downward movement of the movable plate 50 by the piston and cylinder arrangements 48 in a manner hereinafter described causes the stripper plate 65 to subsequently move in unison therewith until the stripper plate 65 is stopped in its downward movement by the stationary frame plate 46. Thus, the movable plate 50 has the abutment means 72 for abutting against the stripper plate 65 to move the stripper plate 65 downwardly therewith in opposition to the force of the compression spring 68 acting on the frame 45 after the plate 50 has moved downwardly from its up position as illustrated in FIG. 5 to its cover member cutting position illustrated in FIG. 12 whereby the stripper plate 65 is adapted to wrap a strip 73 of cover member material around the annular die edge 62 so as to hold the strip 73 taut and substantially free of wrinkles against the opening 61 of the knife 60 during a subsequent blanking operation of a cover member 38 therefrom as will be apparent hereinafter.

The movable plate 50 also carries other abutments or blocks 74 for engaging against cooperating blocks 75 on the stationary frame plate 46 to limit the downward stroke of the movable plate 50 relative to the frame 44 under the influence of the piston and cylinder arrangements 48 for the blanking operation on the cover strip 73 as will be apparent hereinafter.

Each transfer device 54 includes a rigid backing member 76 secured to the piston shaft 53 of its respective piston and cylinder arrangement 52 and cooperates with a lower plate 77 to define a chamber 78 therebetween with the lower plate 77 being secured to the backing plate 76 and having a lower flat surface 178 provided with a plurality of openings 79 passing therethrough and leading to the chamber 78. The lower plate 77 can be suitably beveled at 80 at its lower edge to define the peripheral edge thereof for forming a

depression in the cut cover member 38 after the same has been disposed upon the open end 37 of the product filled container body 35 in a manner hereinafter described.

The chamber 78 of the transfer device 54 is adapted to be interconnected to a suitable vacuum source (not shown) by a passage 81 formed in the respective piston rod 53 and disposed in communication with the chamber 78 and a conduit 82 leading to the vacuum source through a suitable valve (not shown) so that when the valve interconnects the vacuum source to the chamber 78, the lower surface 178 of the transfer device 77 is adapted to have a pressure differential created across the same so as to hold the cut cover member 38 thereto as will be apparent hereinafter.

An annular retaining ring formed of resilient material 83 surrounds the plate 77 of the transfer device 54 and has backing members 84 thereof normally disposed against the upper peripheral surface 85 of the plate 77 in the manner illustrated in FIG. 5 by a plurality of compression springs 86 disposed between the backup member 76 and the backing members 84 of the retaining ring 83. However, the plate 77 of the transfer device 54 is adapted to move relative to the retaining ring 83 for a purpose hereinafter described.

The retaining ring 83 is shaped in substantially the same annular configuration as the annular flange 39 of a container body 35 and has slots 87 formed therethrough in the manner illustrated in FIG. 6 on each side thereof to permit a heating element of a tack sealer to be received therein as will be apparent hereinafter.

As illustrated in FIG. 5, the rotatable table 22 has the pockets 24 thereof defined by a container body receiving member 87 having an upper annular surface 88 for receiving the flat annular flange 39 of the container body 35 thereon whereby the container body 35 is suspended within a chamber or recess 89 formed in the pocket defining member 87.

In this manner, the retaining ring 83 of the transfer device 54 for a particular pocket 24 of the table 22 is alignable with the annular flange 39 of a product filled container 35 brought beneath the same by the rotatable table 22 so that the retaining ring 83 is adapted to compact the outer peripheral edge 90 of a cover member 38 against the annular flange 39 of the product filled container body 35 and, thus, compact the flange 39 of the container body against the flat backing surface 88 of the pocket defining member 87.

The apparatus 28 of this invention also includes means for tack sealing the cover member 38 onto the open end of the container body 35 at the station 28 of the apparatus 20 and such structure is best illustrated in FIGS. 3 and 4 and will now be described.

The frame 44 of the apparatus 28 is adapted to have the tack sealer, generally indicated by the reference numeral 91 in FIG. 4, suspended from the stationary frame plate 46 so as to be alignable with the pockets 24 in the table 22 when the same reach the station 28. In particular, the frame plate 46 rotatably carries a pair of shafts 92 and 93 which extend beyond the outer edge 94 of the table 22 with the ends of the shafts 92 and 93 that extend beyond the end 94 of the table 22 carrying sector gears 95 and 96. The sector gear 95 is disposed in meshing relation with rack teeth 97 on a rack

member 98 axially movable in a rack support bearing 99 mounted in cantilevered fashion to the plate 46 beyond the end 94 of the table 22. The rack member 98 has rack teeth 100 at the other end thereof which are respectively disposed in meshing relation with a pinion gear 101 disposed in meshing relation with another pinion gear 102 that is also disposed in meshing relation with the sector gear 96 of the shaft 93. A piston and cylinder arrangement 103 is carried by the stationary frame plate 46 beyond the end 94 of the table 22 and has its piston rod 104 interconnected by a rigid bracket 105 to the rack member 98 so that when piston and cylinder arrangement 103 is activated to move the piston rod 104 to the right in FIG. 4, the same carries the rack member 98 therewith to the right which causes the sector gear 95 to move in a counterclockwise direction and the sector gear 96 to move in a clockwise direction in FIG. 4. Conversely, when the piston rod 104 is contracted and, thus, moves to the left in FIG. 4, the rack member 98 moves to the left therewith and causes the sector gear 95 to move in a clockwise direction and the sector gear 96 to move in a counterclockwise direction for a purpose now to be described.

The shafts 92 and 93 respectively carry a plurality of heating members 106 rotatably mounted to the lower stationary frame plate 46 by pivot pins 107, each heating member 106 having an abutment 108 on the end thereof adapted to be cammed by a cam 109 carried by the shaft 92 or 93. Thus, when the particular sector gears 96 and 95 are respectively moved in a clockwise and counterclockwise direction as illustrated by the arrows in FIG. 4, the cams 109 cause the opposed heater members 106 to pivot downwardly and, thus, engage against the peripheral edge 90 of the cover member 38 at the openings or slots 87 in the retaining ring 83 of the transfer device 54 as will be apparent hereinafter to tack seal or heat seal that engaged portion of the cover member 38 to flange 39 of the container body 35 so that the cover member 38 will now remain secured thereto at such spot sealed portions when the cover member 38 and its container body 35 are subsequently indexed from the station 28 by the table 22 to the next operating station 30 of the apparatus 20.

Thus, it can be seen that the piston and cylinder arrangement 103 is adapted to move the heating devices 106 out of the path of the rotatable table 22 when the sector gears 96 and 95 are respectively and subsequently moved in a counterclockwise and clockwise direction in FIG. 4 to move the cams 109 away from the projections 108 of the heater members 106 so that the heater members 106 can pivot by gravity in a direction that moves the same upwardly from the table 22 to permit the table 22 to be indexed or moved relative thereto.

The strip 73 of cover member material is adapted to have unblank portions thereof indexed between the blanking dies 51 and the knives 60 by being moved from right to left in FIGS. 5 and 8 by indexing feed rollers 110 to the right of the apparatus 28 and similar rollers 111 to the left of the apparatus 28 as illustrated in FIG. 8. The strip 73 is fed from a supply roll 112 thereof around a dancer roll 113 and, thus, to the main drive rollers 110 into the apparatus 28 and out of the same by the rollers 111 to suitable scrap choppers 114 for chopping the blank strip 73 into strips for reclaiming purposes and the like.

In particular, the scrap choppers 114 comprise driven rotatable knife blades 115 respectively disposed on opposite sides of the support plate 116 so as to move in the circular paths indicated by the arrows 119 in FIG. 9 to chop or cut the advancing strip 73 along the chop lines 117 as illustrated in FIG. 10 as the strip 73 is indexed from right to left in FIG. 8 by the drive rollers 110 and 111 during the indexing of an unblanked portion thereof between the blanking dies 51 and their cooperating knives 60.

The operation of the cover member making and securing apparatus 28 of this invention will now be described.

Assuming that the feed rollers 110 and 111 have now indexed an unblanked portion of the strip 73 between the blanking dies 51 and knives 60 while the apparatus 28 is in the up position as illustrated in FIG. 5, the piston and cylinder arrangements 48 are actuated to move the movable plate 50 downwardly from the position illustrated in FIG. 5 to the position illustrated in FIG. 12. However, as the plate 50 begins to move downwardly, the blocks 72 abut against the stripper plate 65 to move the same downwardly therewith before the blanking die 51 reaches the knife 60 so that the stripper plate 65 completely wraps the strip 73 of cover member material around the knife edge 62 of the knife 60 so as to hold the material 73 taut across the knife 60. Thereafter, further downward movement of the plate 50 causes the blanking die 51 to impact the strip 73 against the knife edge 62 of the knife 60 and cut a cover member 38 therefrom.

As the blanking die 51 is making its cutting operation on the strip 73 with the knife 60, the vacuum source is interconnected to the chamber 78 of the respective transfer device 54 and since the transfer device 54 as well as its piston and cylinder arrangement 52 are being carried downwardly in unison with the plate 50 at the time the cover member 38 is being cut from the strip 73 as illustrated in FIG. 12, the lower surface 178 of the transfer member 54 is against the cover member 38 as the same is being cut from the strip 73 and the resulting pressure differential being created across the surface 178 of the transfer plate 77 by the vacuum source being interconnected to the chamber 78 causes the cut cover member 38 to be held to the transfer plate 77 even though the same has been completely blanked from the strip 73 by the blanking die 51 compacting against the knife edge 62 of the knife 60. Thus, with the cut cover member 38 now held against the surface 178 of the transfer plate 77, the piston and cylinder arrangement 52 is actuated to cause the piston rod 53 to move downwardly from the position illustrated in FIG. 12 to the position illustrated in FIG. 13 whereby the retaining ring 83 of the transfer device 54 compacts the outer peripheral edge 90 of the cover member 38 against the flange 39 of the product filled container body 35 disposed below the same by the table 22 as illustrated in FIG. 13. At this time, the piston rod 53 is still moving downwardly and the same carries the transfer plate 77 downwardly therewith relative to the compacting retaining ring 83 to form a depression 118 in the cover member 38 completely across the same as illustrated in FIGS. 5 and 2 inboard of the open end 37 of the container body 35 with the air escaping between the cover member 38 and container body 35 out through the openings 87 of the retaining ring 83 which is now being

held against the peripheral edge 90 of the cover member 38 by the force of the compression spring 86.

While the transfer plate 77 is forming the depression 118 in the cover member 38, the chamber 78 of the transfer device 54 is disconnected from the vacuum source and is interconnected to the atmosphere so that the chamber 78 returns to atmospheric condition and thereby removes the pressure differential across the surface 178 thereof whereby the cover member 38 is no longer secured or held to the transfer device 54. While or after the transfer device 54 is forming the depression in the cover member 38 in the manner illustrated in FIG. 14, the tack sealers 106 are moved into the openings 87 of the retaining ring 83 in the manner previously described to tack seal the exposed portions of the peripheral edge 90 of the cover member 38 to the flange 39 of the container body 35 and while such tack sealing operations is taking place, the piston 53 of the piston and cylinder arrangement 52 is moved upwardly to remove the transfer device 54 from the cover member 38. Also, the plate 50 is moved upwardly by the piston and cylinder arrangements 48 so that after about half way of the up stroke of the plate 50, the tack sealers 106 have completed their heat sealing operation and are moved away from the table 22 so that the table 22 can be subsequently indexed relative to the apparatus 28 and bring two new container bodies 35 to the station 28 for a subsequent covering operation in the manner previously described.

Therefore, it can be seen that the method and apparatus 28 of this invention is readily adapted to form cover members from a strip of cover member stock, place the same on the open ends of product filled container bodies, form depressions in the cover members inboard of the open ends of the container bodies, and tack seal such cover members to the open ends of the container bodies in a fully automatic manner.

Thus, not only does this invention provide an improved apparatus for forming cover members for container bodies or the like, but also this invention provides an improved method of forming such cover members or the like.

It is to be understood that while this invention has been described in connection with a rotatable table 22, such embodiment of the conveyor 22 is merely for the purpose of illustrating one type of conveyor that can be utilized and is not for the purpose of placing any specific limitations on this invention whereby it is to be further understood that the various features of this invention can be utilized with any other type of suitable conveyor, such as a straight line conveyor where each operating station of the apparatus of FIG. 1 would be in an aligned relation along such a straight line conveyor of the continuous belt type or of other configuration and structure.

While the present preferred embodiment of the invention, and method for practicing the same, has been illustrated and described, it will be recognized that the invention may be otherwise variously embodied and practiced within the scope of the following claims.

What is claimed is:

1. Apparatus for covering a product filled and open ended container body comprising a stationary frame, an annular knife carried by said frame, said knife having a peripheral surface and an annular knife edge ar-

ranged in a plane spaced outwardly of said peripheral surface, means carried by said frame for wrapping an unblanked portion of a cover strip about said knife edge to stretch said unblanked portion across said knife edge and urge a peripheral portion of said unblanked portion against said peripheral surface, a blanking die carried by said frame, means for causing relative movement between said blanking die and said knife to compress said unblanked portion between said knife edge and said die and with said unblanked portion stretched across said knife edge to cut a cover member therefrom, and a transfer device movably carried by said frame and having means for holding said cut cover member as said cover member is cut from said strip so that said device can transfer the same from adjacent said knife to the open end of said container body disposed at a station of said frame.

2. Apparatus as set forth in claim 1 wherein said knife is stationary and said blanking die is movable relative to said knife.

3. Apparatus as set forth in claim 1 wherein said transfer device is movable through said annular knife to transfer said cut cover member therefrom to said container body.

4. Apparatus as set forth in claim 1 wherein said means of said transfer device for holding said cut cover member comprises a vacuum holding member of said transfer device.

5. Apparatus as set forth in claim 1 wherein said device has means for forming a depression in the cover member inboard of the open end of said container body after said cover member has been disposed against said open end by said transfer device.

6. Apparatus as set forth in claim 5 wherein said means of said transfer device for forming a depression in said cover member comprises said means for holding said cut cover member.

7. Apparatus for covering a product filled and open ended container body comprising a stationary frame, an annular knife carried by said frame, a blanking die carried by said frame, means for causing relative movement between said blanking die and said knife to compress an unblanked portion of a cover strip between said knife and said die to cut a cover member therefrom, and a transfer device movably carried by said frame and having means for holding said cut cover member as said cover member is cut from said strip so that said device can transfer the same from adjacent said knife to the open end of said container body disposed at a station of said frame, said device having means for forming a depression in the cover member inboard of the open end of said container body after said cover member has been disposed against said open end by said transfer device, said transfer device comprising an outer retaining ring for holding the outer periphery of said cut cover member against the open end of said container body, said transfer device comprising an inner holding member movable relative to said outer retaining ring, said holding member being said means for holding said cut cover member and said means for forming said depression in said cover member.

8. Apparatus as set forth in claim 7 wherein said holding member comprises a perforated plate, and means for creating a pressure differential across said

perforations so that said pressure differential causes said cut cover member to be held to said plate.

9. Apparatus as set forth in claim 7 wherein said outer retaining ring has an opening therein for exposing part of said cover member that is disposed against said open end of said container body, and means movably carried by said frame means for moving into said opening of said outer retaining ring to secure said cover member at said opening to said open end of said container body.

10. Apparatus as set forth in claim 9 wherein said outer retaining ring has said opening in one side thereof and another like opening on the other side thereof, said means for securing said cover member to said open end of said container body comprising a pair of heater members respectively movable into said openings to heat seal said exposed portions of said cover member to said open end of said container body.

11. Apparatus as set forth in claim 1 wherein said means for wrapping said cover strip about said knife comprises an annular retainer disposed outboard of said knife and being movably carried by said frame.

12. Apparatus as set forth in claim 1 wherein a conveyor means is carried by said frame and is movable relative thereto to serially bring product filled container bodies to said station of said apparatus.

13. Apparatus as set forth in claim 1 wherein means are carried by said frame for serially feeding unblanked portions of said cover strip between said knife and said blanking die.

14. Apparatus as set forth in claim 1 wherein means are carried by said frame means for securing said cover member on said open end of said container body while said transfer device is disposing said cover member thereagainst.

15. A method for covering a product filled and open ended container body comprising the steps of disposing an unblanked portion of a cover strip between an annular knife having an annular knife edge and a blanking die, wrapping and depressing said unblanked portion about the periphery of said knife to stretch said unblanked portion across said knife edge, causing relative movement between said blanking die and said knife to compress said unblanked portion of said cover strip between said knife edge and said die and with said unblanked portion stretched across said knife edge to cut a cover member therefrom, holding said cut cover member as said cover member is cut from said strip with a transfer device, and, thereafter, moving said transfer device to transfer said cut cover member so that said device can transfer the same from adjacent said knife to the open end of said container body.

16. A method as set forth in claim 15 wherein said knife is stationary and said blanking die is moved relative to said knife by said step of causing relative movement therebetween.

17. A method as set forth in claim 15 wherein said step of moving said transfer device comprises the step of moving said transfer device through said annular knife to transfer said cut cover member therefrom to said container body.

18. A method as set forth in claim 15 wherein said step of holding said cut cover member with said transfer device comprises the step of holding said cut cover member to a holding member of said transfer device by vacuum.

19. A method as set forth in claim 15 and including the step of forming a depression in the cover member inboard of the open end of said container body with said transfer device after said cover member has been disposed against said open end by said transfer device.

20. A method as set forth in claim 15 wherein said step of wrapping said unblanked portion about said knife edge comprises the step of moving an annular retainer outboard of said knife against said unblanked portion of said cover strip and into telescoping relation with said knife.

21. A method as set forth in claim 15 and including

the step of serially bringing product filled container bodies beneath said knife to serially receive cut cover members therefrom.

22. A method as set forth in claim 15 and including the step of serially feeding unblanked portions of said cover strip between said knife and said blanking die.

23. A method as set forth in claim 15 and including the step of securing said cover member on said open end of said container body while said transfer device is disposing said cover member thereagainst.

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