

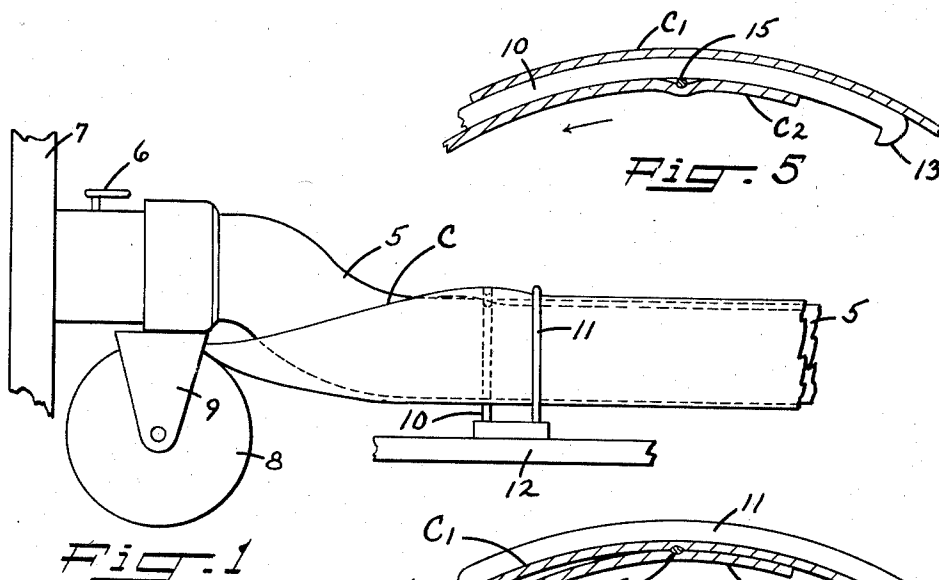
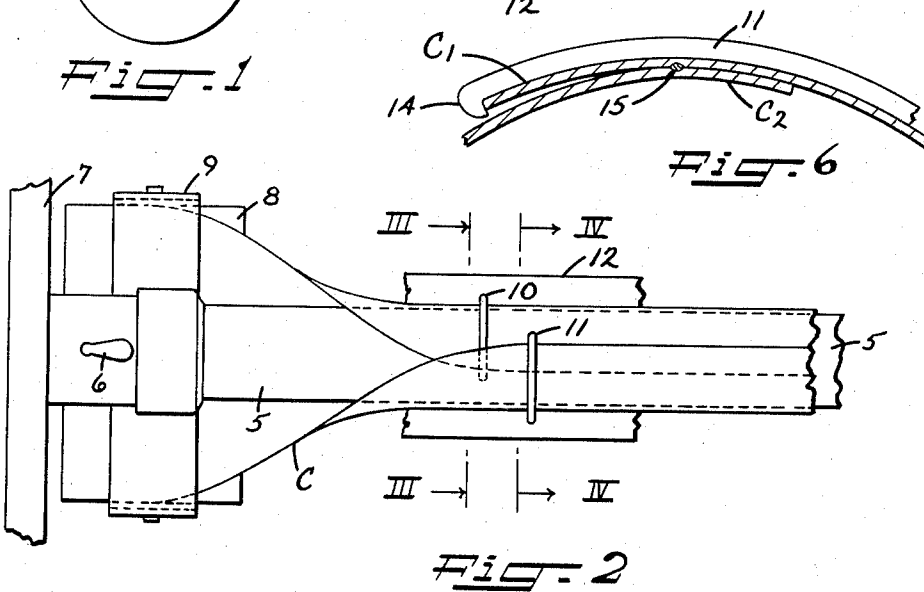
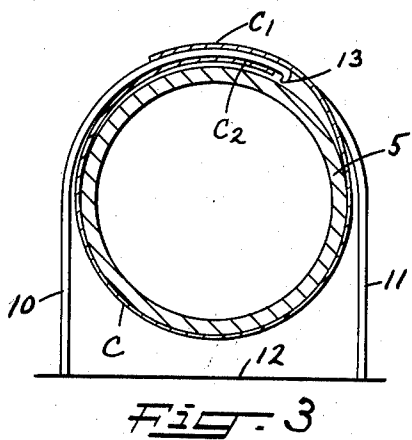
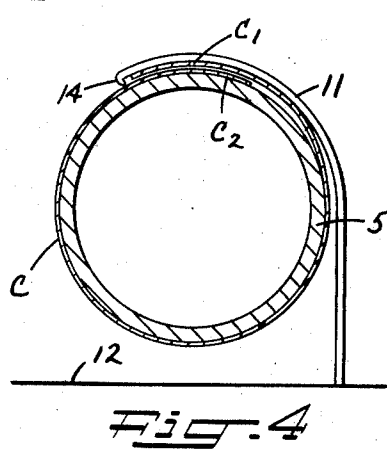
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GUIDE FOR SAUSAGE STUFFING MACHINE

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GUIDE FOR SAUSAGE STUFFING MACHINE

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1 Claim. (Cl. 53—177)

This invention relates to continuous packaging machines, and more particularly to an improved forming tool for controlling the feed of the casing.

Machines for continuously forming and stuffing a casing with various objects especially food products such as sausage are well known in the art. These machines usually supply the material to be packaged through a tube or nozzle around which the casing material is continuously fed in the form of a strip. Suitable means for guiding the strip around the nozzle to overlap the edges are utilized. In addition the overlapped edges may be sealed in a variety of ways by means of a solvent, adhesive, with or without heat and/or pressure. Such sealing apparatus is of necessity intended to be limited to the overlapped portion of the casing. It therefore becomes important to maintain the overlapped area in the proper aligned position with the various sealing mechanisms. Not only is it important that the overlapped edges follow with reasonable accuracy the path which provides maximum sealing effect, but an additional factor of considerable importance is present when a liquid adhesive or solvent is applied to one or both of the casing edges before being overlapped. Where the sealing agent is caustic or a dilute caustic solution, it is imperative that no more than the required amount of caustic be applied to the overlapped edges and that no trace of the caustic be carried beyond the inner overlapped edge so that it comes in contact with the contents of the casing. A typical device for forming stuffed products is shown in Conti Patent No. 2,686,128 and Cornwell Patent No. 2,686,725. As disclosed in the Conti patent a thread may be used to carry a metered quantity of the adhesive to the area between the overlapped edges to provide more effective sealing.

It has been found in practice that the casing edges do not always run exactly through the forming tool in the same longitudinal area. This is called weaving and may be caused, among other things, by improper alignment or tilting of the feed roll, warping of the feed roll due to uneven moisture or for some other reason which results in the edges of the casing being curved rather than straight. When one or more of these conditions occur, the edges of the overlapped casing in the area of the forming tool tend to rotate around the stuffing nozzle so that the adhesive applying means, whether it be a wiper or a thread, is no longer located at the most desired point of application. Excessive displacement will, of course, introduce sufficient adhesive near the edge of the undercasing flap to permit the adhesive to flow over the edge and come in contact with the contents.

A primary object of the invention therefore is to provide an improved forming tool for machines of the class described which controls weaving of the casing.

A further object of the invention is to provide, in machines of the class described, a pair of forming tools extending from opposite sides around the nozzle and having means thereon for limiting the amount of rotational movement of the casing.

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Further objects will be apparent from the specification and drawings in which:

Figure 1 is a side view of a stuffing nozzle and its associated structure constructed in accordance with the present invention;

Figure 2 is a top view of the structure of Figure 1; Figure 3 is an enlarged transverse section as seen at III—III of Figure 2;

Figure 4 is an enlarged transverse section as seen at IV—IV of Figure 2;

Figure 5 is an enlarged fragmentary detail showing the forming tool of Figure 3 used in conjunction with a sealing thread; and

Figure 6 is an enlarged fragmentary sectional detail showing the forming tool of Figure 4 used in conjunction with a sealing thread.

The invention comprises essentially the provision of a pair of guides extending partially around the stuffing nozzle and an abutment on each of said guides to limit weaving of the web which is formed around the nozzle by means of the guides.

Referring now more particularly to the drawings, a conventional stuffing nozzle 5 for a food product such as sausage or frankfurter meat is supported and connected to a container 7. Valve 6 controls the flow of the food product to and through the nozzle 5. A roll 8 of casing or wrapping material C is supported in a bracket 9 which may or may not be mounted on the nozzle 5. The casing C feeds around the nozzle as shown in Figure 1 and is guided to form an overlapped seam extending longitudinally of the nozzle by means of forming tools 10 and 11. These forming tools are positioned on opposite sides of the nozzle and in close spaced relation thereto to permit free passage of the casing. In the present embodiment, the forming tools are supported on a base member 12 independently of the nozzle. The forming tool 10 which controls and guides the underneath flap or edge of the casing C is in advance of the tool 11 which controls and guides the outer flap of the casing. As seen in Figure 3 the under flap passes between forming tool 10 and the nozzle 5 and the longitudinal edge of the casing is rotationally retained by means of an abutment 13 at the terminus of tool 10. The outer flap C₁ is guided over the inner flap C₂ by the second forming tool 11 which likewise is provided with a suitable stop or abutment 14 that prevents the outer flap C₁ from weaving beyond this abutment in a counterclockwise direction as seen in Figure 4. The relative position of the flaps C₁ and C₂ for normal operation is shown in Figures 3 and 4. In this event a slight clearance is provided between the longitudinal edges of the flaps and their adjacent abutments 13 and 14.

When the adhesive or solvent for sealing the flaps of the casing is applied by means of a metering thread 15 (Figures 5 and 6) or if it is applied by means of a wheel, brush or wiper, it is important that no adhesive or solvent find its way beyond the edge C₂ as shown in Figure 5. Should excessive weaving of the casing occur, the edge of inner flap C₂ might come so close to the position of the thread 15 that the solvent or adhesive would flow over the inner edge. The maximum counterclockwise rotated position of flap C₂ is shown in Figures 5 and 6 in which the edge of flap C₁ has turned counterclockwise so that it impinges against the abutment 14 on tool 11. This is the maximum turned position that would be possible with the illustrated construction. Figure 5 shows how even in this maximum turned position the thread 15, which symbolizes the area in which the solvent would be applied between the flaps, is still well spaced from the edge of the inner flap C₂. This control then not only insures that the heat and pressure sealing mechanism if

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used is always applied at the most effective area of the overlapped flaps, but it also positively prevents any of the liquid sealing solution from reaching the inner edge of the flaps.

It will be understood that the abutments 13 and 14 may take any suitable size, proportion or shape depending upon the shape and diameter of the stuffing nozzle, the thickness of the casing and other similar conditions.

The invention is not limited to round nozzles nor to wire type of guides for the running casing strip. It may be applied with equal effectiveness to any type of machine in which the casing or wrapper strip feeds over and around a mandrel so that the edges of the strip are positioned to be sealed in overlapped relationship.

Having thus described my invention, I claim:

A stuffing machine assembly comprising a nozzle, a supply of continuous casing material, a first forming tool extending partially around the nozzle in spaced relation thereto and serving to direct one longitudinal edge portion of the casing material partially about said nozzle, said first forming tool terminating with a casing edge abutment extending substantially radially of said nozzle

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for limiting rotation of one traveling casing edge in one direction relative to said nozzle, a second forming tool extending partially around the nozzle in spaced relation thereto and serving to direct the other longitudinal edge portion of the casing material into a generally snug relationship about said nozzle and into overlapping relation with the first-mentioned longitudinal edge portion, said second forming tool terminating with a casing edge abutment extending substantially radially of said nozzle for limiting rotation of the other traveling casing edge in a direction opposite to said one direction and means for applying an adhesive to the casing material to secure said overlapping longitudinal edge portions.

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