A seal banding machine (1) designed to apply a sealing band (B) to the lateral surface (A11) of a circular container body (A) includes: elements (11) which apply the sealing band (B) to the lateral surface (A11) of container body (A), which are rotatable about a respective axis and which have a surface (111) for retaining and supporting the sealing band (B); and elements (12) for rotating the container body (A) with the respective lateral surface (A11) engaging the peripheral surface (111) of the elements (11) which apply the sealing band (B). Elements (21) are provided for spreading an adhesive on the sealing band (B), which are located at the elements (11) for applying the sealing band (B).
SEAL BANDING MACHINE

TECHNICAL FIELD

[0001] This invention relates to a machine for applying a sealing band to the lateral surface of a container body.

[0002] More specifically, the container body is a carton containing portions of a pasty food product, especially in the form of processed cheese.

BACKGROUND ART

[0003] Seal banding machines are known in the prior art which are designed to apply a sealing band to the circular lateral surface of a container body for holding portions of processed cheese.

[0004] In particular, prior art seal banding machines operate with alternating or continuous motion.

[0005] More specifically, the seal banding machines that operate with continuous motion comprise means which apply the sealing band to the lateral surface of a carton and which have a surface for retaining and supporting the sealing band, and means designed to rotate the container body while the latter's lateral surface engages the peripheral surface of the means which apply the sealing band.

[0006] Thus, prior art seal banding machines basically comprise a sealing band application which has a peripheral surface which holds the sealing band web by one of the latter's faces while the opposite face of the sealing band, on which glue has been spread, engages the outside profile of the container body, in turn carried by a star wheel above it mounted, together with similar star wheels for corresponding container bodies, on a corresponding carousel rotatable about an axis parallel to the axis of rotation of the application wheel.

[0007] In these prior art machines, the glue is spread on the sealing band web well before it reaches the application wheel.

[0008] Thus, a watery glue is used to prevent the glue from drying in the event of a machine shutdown which would mean the glue cannot stick the sealing band to the carton when the machine resumes operation. This type of glue, however, tends to saturate the sealing band, making it more liable to tear when subjected to the pulling action of the machine, in turn making it necessary to scrap a certain number of cartons, with further machine shutdowns to remove the defective cartons, and with obvious disadvantages in terms of economic loss.

[0009] Furthermore, in these prior art machines, the application wheel turns at a constant speed and is movable radially relative to the carousel so it can remain tangent to the carton as the latter is made to rotate about the axis of rotation of the carousel.

[0010] Moreover, in these prior art machines, the outfeed side of the application wheel is provided with a brush which engages and compresses the sealing band against the carton as the latter continues to turn in order to make the trailing end of the sealing band overlap the leading end of the sealing band, which is already glued to the lateral surface of the carton and also to stretch the sealing band to remove creases or other application flaws caused by the slight difference between the tangential speed of the application wheel and that of the carton carried by the carousel.

SUMMARY OF THE INVENTION

[0011] This invention proposes a novel solution, alternative to the solutions known up to now, and/or, more specifically, aims to overcome one or more of the above mentioned drawbacks, and/or to meet one or more of the above mentioned needs.

[0012] It is accordingly provided a seal banding machine designed to apply a sealing band to the lateral surface of a container body, in particular constituting a carton containing portions of a pasty food product, especially in the form of processed cheese; the machine comprising means for applying the sealing band to the lateral surface of a carton and having a surface for retaining and supporting the sealing band, means for rotating the container body against the peripheral surface of the means that apply the sealing band; and being characterized in that it further comprises means for spreading an adhesive on the sealing band and located at the means that apply the sealing band.

[0013] That way, the adhesive can be applied only when the sealing band is about to be used so that adhesive is not applied on a large amount of sealing band material when the machine come to a stop in the event of a shutdown. It is therefore possible to use adhesive that does not weaken the resistance of the sealing band.

BRIEF DESCRIPTION OF THE DRAWINGS

[0014] This and other innovative aspects of the invention are set out in the appended claims and technical features and advantages of the invention are apparent from the detailed description which follows of a non-limiting example embodiment of it with reference to the accompanying drawings, in which:

[0015] FIG. 1 is a schematic perspective view of a container sealed by the seal banding machine;

[0016] FIG. 2 is a schematic perspective view of the preferred embodiment of the seal banding machine;

[0017] FIG. 3 is a schematic top plan view of the preferred embodiment of the seal banding machine in a condition where it applies the adhesive and the tear string to the sealing band;

[0018] FIG. 4 is a schematic top plan view of the preferred embodiment of the seal banding machine in a condition where it is starting to apply the sealing band to the container body;

[0019] FIG. 5 is a schematic top plan view of the preferred embodiment of the seal banding machine in a condition where it cuts the sealing band on the means for applying the sealing band;

[0020] FIG. 6 is a schematic top plan view of the preferred embodiment of the seal banding machine in a condition where it cuts the tear string on the means for applying the sealing band;

[0021] FIG. 7 is a schematic top plan view of the preferred embodiment of the seal banding machine in a condition where it is completing application of the sealing band to the container body.

DESCRIPTION OF THE PREFERRED EMBODIMENTS OF THE INVENTION

[0022] A preferred embodiment 1 of the seal banding machine is illustrated in FIG. 2. The seal banding machine 1 is designed to apply a sealing band B to the lateral surface A11 of a container body A, illustrated in FIG. 1, with a circular profile, in particular constituting a carton for containing portions of a pasty food product, especially processed cheese.
The carton A provided with the sealing band B is, as illustrated in FIG. 1, composed of a first and a second opposed half-shells A1, A2, which face each other in such a way as to form a chamber for housing the product or processed cheese portions.

As may be well inferred from FIG. 1, the half-shells A1, A2 have respective flat faces A12, A13, from which corresponding perpendicular portions extend to engage with each other and together form the circular perimeter wall A11 of the carton which, along its centre line has a perimeter slot to be covered with a sealing band B, or strip, of paper or other material wound round, and fixed by adhesive to, the lateral wall A11, in such a way as to form retaining means for holding the two half-shells A1, A2 together.

The sealing band B might, as illustrated here, have respective end portions B' and B'' which overlap for a certain stretch.

The sealing band B may, as illustrated here, be provided with a tear string C, which is held between the sealing band and the outside face A11 of the container body and which has a grip and pull end portion C' protruding from the trailing end B' of the respective sealing band B overlapping the leading end B'.

The seal banding machine 1 comprises a mounting frame 10 for means 11 for applying the sealing band B to the lateral surface A11 of a carton A, the application means 11 being in the form of means which are able to rotate about a vertical axis X11 and which have an outside circumferential surface 111 for retaining and supporting the sealing band B.

This seal banding apparatus or machine 1 further comprises means 12 for rotating the container body A in such a way that the respective lateral surface A11 engages the peripheral surface 111 of the means 11 for applying the sealing band B, in order to transfer the sealing band B from the application means 11 by causing its adhesive coated face BDE to adhere to the outside circumferential face A11 of the container body.

In practice, the means for applying the sealing band are in the form of a wheel which is rotatable in an angular direction R11 and which comprises a circular body 111a forming the cylindrical peripheral surface 111 for supporting, or retaining, the sealing band B and a plurality of radial spokes 111b joining the cylindrical surface 111 to a respective hub associated with a central rotary shaft 111c.

The means 12 for supporting and feeding the container body A in turn comprise means 121 for bilaterally engaging the faces A12 and A13 of the container body, these means 121 being designed to rotate and cause the container body to rotate in an angular direction indicated by the arrow R121 about a respective axis of revolution X121 and being supported on a body 122 that is rotatable in an angular direction indicated by the arrow R122 about a respective axis X122.

The bilateral engagement means 121 comprise a first and a second opposite plates 1211, 1212 which engage the top face A12 and the bottom face A13 of the carton A, respectively.

The rotatable element or carousel 122 has a central shaft 122b supporting and rotating shaft from which there extend a plurality of radial arms 122a, supporting a corresponding bush 121a for mounting a respective rotary spindle 121a for rotating the top plates 1211 of the means 121 for engaging and rotating the container body A.
the sealing band, thus obtaining, for these types of sealing bands, a sealing band without creases.

[0042] Further, according to the invention, for other types of sealing bands, the tangential speed of the surface 111 of the means 11 for applying the sealing band B is equal to the tangential speed of the surface A11 of the container body A during a first stage, or step, of applying the sealing band so as to facilitate contact of the sealing band with the container body, after which, in the next step, the angular speed of the means 11 for applying the sealing band B is varied in such a way that the peripheral speed of the surface 111 is greater than the tangential speed of the lateral surface A11 of the container body A at the point of mutual contact in order to stretch the sealing band along its lateral edges so that, for these types of sealing bands, too, a sealing band that is totally free of creases is obtained.

[0043] Thus, any type of sealing band can be applied in a particularly effective manner without using additional brushes as in the prior art.

[0044] Furthermore, the trailing end portion B" of the sealing band can be easily overlapped with the leading end portion B' of the same sealing band.

[0045] As illustrated in FIG. 2, the container bodies enter the apparatus according to the invention at an infeed end or section I and are picked by a correspondingly revolving star wheel 22 which, acting in conjunction with a corresponding arcuate sliding surface 222, takes the container bodies A to respective bilateral engagement housings 121, which rotate each container body A about the axis of revolution X121, feeding it towards the means 111 for applying the sealing band by the rotation of the carousel 122 in such a way as to engage the lateral edge A11 of the container body A against the circular peripheral surface 111 of the wheel 11 that applies the sealing band which is in turn rotationally fed about the axis X11 and which carries the sealing band.

[0046] The feed means 122 cause the rotating container body to rotate through a circular arc while keeping a respective point on the peripheral surface A11 in contact with an opposing point on the sealing band carrying surface 111 and then take the container body A, with the sealing band B applied to the side of it, to the outfeed end U where a respective star wheel 32, with the aid of an opposing curved sliding surface 322, feeds the container body out of the seal banding apparatus.

[0047] As illustrated, the infeed and outfeed star wheels 22, 32, which rotate according to the angular directions R22, R32, have a plurality of spokes, and more specifically, four spokes or arms 22a, 32a, forming between them respective housings, each of which engages and feeds a respective container body.

[0048] Advantageously, the means 11 for applying the sealing band have a sealing band rotating and supporting surface 111 which is adapted to support a single sealing band B and which features a sealing band retaining circumference whose extension is greater than the length of the sealing band B itself.

[0049] In practice, as may be inferred from the drawings, the sealing band B supporting surface 111 of the application wheel 11 has a sealing band retaining circumference whose extension is greater by a certain amount than the length of the sealing band B to be applied.

[0050] That way, the means for applying the sealing band can conveniently be used to apply the sealing band B to the container body completely, if necessary also stretching the band by allowing the retaining surface 111 to slide under the sealing band which is already being held to the container body, thus eliminating the risk of creasing the sealing band. The part of the surface 111 exceeding the length of the sealing band advantageously allows the surface to slide under the sealing band in order to improve application.

[0051] A part 111' of the peripheral surface 111 of the means 11 for applying the sealing band B thus constitutes means for supporting the sealing band B. The peripheral surface 111 of the means 11 for applying the sealing band B is thus provided with suction holes constituting means, labelled 111a, for retaining the sealing band B and which are provided on the circumferential zone 111' of the peripheral surface 111.

[0052] In practice, the peripheral surface 111 of the means 11 for applying the sealing band B has a circumferential zone 111' which is provided with respective suction holes 111'a for retaining the sealing band B and a circumferential zone 111" which is not provided with holes or means for retaining the sealing band B.

[0053] Means 21 are also provided for spreading an adhesive on a corresponding face BE of the sealing band and which operate while the sealing band is being held by the means 11 for applying the sealing band B.

[0054] In practice, the sealing band B is obtained from a corresponding web 20 of material which is fed from a corresponding roll, not illustrated in the accompanying drawings.

[0055] Thus, if the machine comes to a stop, no adhesive is applied to the sealing band web. It is thus possible to use an adhesive that does not excessively moisten the sealing band, thereby obviating the drawbacks of the prior art.

[0056] The reference numeral 31 in the drawings denotes means for applying a sealing band B tear string C while the sealing band is being held by the means 11 for applying the sealing band B.

[0057] Advantageously, the means 31 for applying a sealing band B tear string C are located downstream of the means 21 for spreading the adhesive, with reference to the direction of sealing band B feed.

[0058] More specifically, the means for spreading the adhesive comprise a gumming roller or adhesive applicator, labelled 211 in FIG. 2, which is suitably supplied with adhesive material by a counter-roller 211b.

[0059] In practice, the means 21 for spreading the adhesive used to attach to the outside surface A11 of the container body the outside face BE of the sealing band B, that is, the face opposite the one engaged to the application wheel 11, comprise an applicator roller 211 which has an axis of rotation parallel to the axis of rotation of the means 21 for applying the sealing band and which is located at, and in contact with, the outside surface 111 of the means 11 for applying the sealing band.

[0060] Means 31 are provided for applying the string C on the sealing band face BE facing the outside. These means comprise respective means for ejecting or “shooting” the string onto the sealing band B.

[0061] One end of the tear string C is held at a respective leading end B' of the sealing band B by corresponding retaining means provided on the means 11 for applying the sealing band and comprising, preferably, a corresponding tab, or clip, 71 for engaging and retaining that end of the tear string on the corresponding outside face of the sealing band B.
In practice, the means 11 for applying the sealing band are provided with means for retaining a respective end C2 of the tear string C.

The means 31 for applying a tear string also comprise respective rollers 312 for feeding the string.

The reference numeral 311, on the other hand, denotes means for ejection, or shooting, the respective end of the tear string C.

Means 41 are also provided for cutting the sealing band from the respective web of material B0, which operate while the sealing band B is on the means 11 for applying the sealing band B.

The means 41 for cutting the sealing band B are located upstream of the means 21 for spreading the adhesive, with reference to the direction of sealing band feed.

The means 41 for cutting the sealing band B are also located upstream of the means 31 for applying the tear string, with reference to the feed direction.

Advantageously, the means 41 for cutting the sealing band B are fixed and, in order to cut the sealing band B from the web of material B0, engage a corresponding portion 111p extending radially with respect to the outside retaining surface 111 of the means 11 for applying the sealing band.

In practice, as illustrated in FIG. 2, the sealing band holder wheel 11 is provided with a radial projection 111p which, when it reaches the cutting edge of the fixed vertical cutting blade 41, as illustrated in FIG. 4, engages the cutting edge of the blade 41, thereby cutting the web B0 transversely and forming a sealing band B of suitable length.

The sealing band B cutting means 41 are located at, or in the vicinity of, the means 31 that apply the same sealing band B, the cutting means being, as illustrated, in the form of a blade that is coplanar with, and radially extended with respect to, the sealing band application wheel.

Means 51 are also provided for cutting the tear string C which operate while the sealing band B and the tear string C are on the means 11 for applying the sealing band B.

The means 51 for cutting the string C are provided downstream of the adhesive spreading means 21, with reference to a feed direction of the means 41 for cutting the sealing band B from the web of material B0.

In practice, as illustrated in FIG. 2, the sealing band holder wheel 11 is provided with a radial projection 111p which, when it reaches the cutting edge 51 for cutting the tear string, as illustrated in FIG. 6, engages the cutting edge of the blade 51, thereby cutting the tear string.

As illustrated, the means 41 for cutting the sealing band B from the web of material B0 are located upstream of the means 31 for applying the tear string, C with reference to the feed direction.

Further, the means 11 for applying the sealing band B and the means 12 for supporting and feeding the container body A are advantageously movable radially relative to each other in order to keep the outside surface of the application body 11 engaged with the outside surface of the respective circular carton A.

More specifically, the means 11 for applying the sealing band are movable radially relative to the means 12 for supporting and feeding the container body, and more specifically, relative to the axis of rotation X122 of the rotary carousel.

For the purpose, the mounting frame comprises a movable plate or element 101, which mounts the application wheel 11 and which is movable radially towards and away from the carousel 12 for feeding the container body A, as shown by the arrow F0 in FIG. 2.

In practice, in order for the container bodies A on a rotary carousel to be able to rotate on the outside surface of the application wheel 11, the application wheel 11 must move radially relative to the carousel itself as the cartons A are fed forward in contact with the peripheral outside surface 111 of the application wheel and with the sealing band interposed between them.

The means 11 for applying the sealing band B have a circumferential surface 111 which is greater in length than the sealing band B, in such a way as to support a single sealing band which is spaced from the leading end of the next sealing band.

That way, it is possible to apply a respective sealing band to a carton and, in order to avoid wasting material in the event of a machine shutdown, to prevent the next sealing band from being fed.

In the present machine, the carousel 12 that feeds the container body and the means 11 for applying the sealing band B are driven by respective, separate electric motors controlled by the electronic means that control the machine.

Further, the reference numeral 61 denotes means for feeding the web of sealing band material B0 towards the supporting and application means 11. The means 61 feeding the web B0 are located in the vicinity of, and substantially in the same plane as, the application wheel 11, comprising, as may be clearly inferred from FIG. 3, a first and a second opposed rollers 611, 611, between which the web of material B0 moving towards the application means 11 is fed.

Below is a brief description of how the machine works. In a first step, illustrated in FIG. 3, a front end of the web of material B0 is fed forward and held on the application means or wheel 11, while the adhesive is spread on the outside face of the web B0 by the adhesive spreading means 21.

As illustrated in FIG. 3, when the front end of the web B0 feeding forward on the application means 11, reaches the means 31 for applying the tear string C, one end of the latter is gripped and held in contact with the front end of the sealing band web B0 by the above mentioned means 71 for gripping or retaining the end of the tear string, while the means 31 for applying or supplying the tear string eject or “shoot” the tear string C against the adhesive-coated face of the sealing band web B0 so as to make the tear string C adhere to the adhesive-coated face of the web B0.

Proceeding with the feeding of the web B0, simultaneously spreading the adhesive on the sealing band web B0 and associating with the latter the tear string, as illustrated in FIG. 4, the application means 11 move the front end of the sealing band web B0 to and in contact with the lateral surface A11 of a corresponding container body A, thus starting to apply or transfer the web B0 to the peripheral surface of the same container body A.

As illustrated in FIG. 5, proceeding with the feeding of the web B0, spreading the adhesive, applying the tear string C and transferring the web B0 to the container body A, the web of material B0 is cut.

For this purpose, the radial projection 111p acts in conjunction with, or is engaged by, corresponding cutting means 41 in such a way as to cut the interposed web B0 and form the sealing band B to be applied. At this point, the means 61 for feeding the sealing band web B0 stop feeding the sealing band B0.
Proceeding with the feeding of the sealing band B web B0, applying the tear string C and transferring the sealing band B to the container body A, as illustrated in FIG. 6, the tear string C is cut.

In effect, the rear end of the sealing band B substantially reaches the tear string C cutting means 41 which, acting in conjunction with a respective protrusion 111P, circumferentially spaced from, or slightly behind, the first protrusion 111P with reference to the feed direction, cut the tear string C to form the corresponding end C1 of the tear string C protruding from the sealing band B.

At this point, the application means 31 stop feeding the tear string C.

Substantially simultaneously, as illustrated in FIG. 6, to make the next sealing band, the means 61 for feeding the sealing band web B0 start feeding the web B0 again, the front end of the latter being held by the application means 11 immediately downstream of the zone, or recess, which houses the gripping means 71.

Proceeding with the feeding of the sealing band B, with the tear string C attached to it, application or transfer of the sealing band to the peripheral surface A11 of the container body A is completed. This last step is illustrated in FIG. 7.

During the application of the sealing band to the container body, the distance “d” between the axes of rotation X122 of the carton holder carousel and X11 of the sealing band application wheel varies in such a way as to keep the peripheral surface of the container body A in contact with the lateral surface 111 of the application wheel 11.

More in detail, after the container body first comes into contact with the application wheel 11, the distance “d” gradually decreases until the axes of rotation X122 of the carton holder carousel and X11 of the sealing band application wheel reach their closest and then gradually increases again until the container body A is no longer in contact with the application wheel 11.

The invention described above is susceptible of industrial application. Moreover, it would be obvious to one skilled in the art that several changes and modifications can be made to the invention without departing from the spirit and scope of the invention, described in depth above. In particular, one skilled in the art could easily imagine further embodiments of the invention comprising one or more of the features described herein. It will also be understood that all the details of the invention may be substituted by technically equivalent elements.

1-30. (canceled)

31. A seal banding machine (1) applying a sealing band (B) to the lateral surface (A11) of a container body (A), in particular constituting a carton containing portions of a paste food product, especially in the form of processed cheese, said container (A) provided with the sealing band (B) being, composed of a first and a second opposed half-shells (A1, A2), which face each other in such a way as to form a chamber for housing the product; the machine comprising means (11) for applying the sealing band (B) to the lateral surface (A11) of a carton (A) and having a surface (111) for retaining and supporting the sealing band (B), means (12) for rotating the container body (A) against the peripheral surface (111) of the means (11) that apply the sealing band (B), and being characterized in that the means (11) for applying the sealing band (B) have a surface (111) for retaining and supporting the sealing band (B), designed to support a single sealing band (B) and having a sealing band retaining surface whose extension is greater than the length of the sealing band (B) itself.

32. The machine according to claim 31, characterized in that it further comprises means (21) for spreading an adhesive on the sealing band (B) and located at the means (11) that apply the sealing band (B).

33. The machine according to claim 31, characterized in that the means (11) for applying the sealing band (B) comprise a peripheral surface (111) having a part (111P) that constitutes means for supporting the sealing band (B).

34. The machine according to claim 31, characterized in that the means (11) for applying the sealing band (B) comprise a peripheral surface (111) having a circumferential zone (1111) provided with means (111a) for retaining the sealing band (B) and a circumferential zone (1111) without said means for retaining the sealing band (B).

35. The machine according to claim 31, characterized in that it comprises means (21) for spreading an adhesive on the sealing band (B) while the latter is being transported on the means (11) for applying the sealing band (B).

36. The machine according to claim 32, characterized in that the means (21) for spreading the adhesive on the outside face of the sealing band (B) to glue it to the outside surface of the container body comprise an applicator roller having an axis of rotation parallel to the axis of rotation of the means (11) for applying the sealing band and which is designed to come into contact with the outside surface of the means (11) for applying the sealing band.

37. The machine according to claim 31, characterized in that it comprises means (31) for applying a tear string (C) on the sealing band while the latter is being supported by the means (11) for applying the sealing band (B).

38. The machine according to claim 37, further comprising means (21) for spreading an adhesive on the sealing band (B), and means (31) for applying a tear string on the sealing band (B) located downstream of the means (21) for spreading the adhesive.

39. The machine according to claim 31, characterized in that it comprises means (41) for cutting the sealing band (B) from the respective web of material (B0).

40. The machine according to claim 39, further comprising means (21) for spreading an adhesive on the sealing band (B), and the means (41) for cutting the sealing band (B) are located upstream of the means (21) for spreading the adhesive.

41. The machine according to claim 39, characterized in that the means (41) for cutting the sealing band (B) are located at the means (11) for applying the sealing band (B).

42. The machine according to claim 39, characterized in that the means (41) for cutting the sealing band (B) are located upstream of the means (31) for applying the tear string (C).

43. The machine according to claim 39, characterized in that it comprises means (41) for cutting the sealing band (B), which are fixed and engage the web of material (B0) at a radial extension (111b) of the retaining surface (111) of the means that apply the sealing band (B).

44. The machine according to claim 39, characterized in that the means (11) for applying the sealing band (B) rotate with continuous motion.

45. The machine according to claim 39, characterized in that it comprises means (51) for cutting the tear string (C) which operate while the sealing band and the tear string are on the means (11) for applying the sealing band (B).

46. The machine according to claim 45, further comprising means (21) for spreading an adhesive on the sealing band (B),
and the means (51) for cutting the tear string (C) are located downstream of the means (21) for spreading the adhesive.

47. The machine according to claim 45, characterized in that the means (51) for cutting the tear string (C) are located downstream of the means (41) for cutting the sealing band (B0).

48. The machine according to claim 45, characterized in that the means (51) for cutting the tear string (C) are located at the means that apply the sealing band.

49. The machine according to claim 31, characterized in that the means (11) for applying the sealing band comprise means (71) for retaining the end of the tear string.

50. The machine according to claim 31, characterized in that the means (11) for applying the sealing band (B) and the means (12) for supporting and feeding the container body (A) are movable radially relative to each other.

51. The machine according to claim 50, characterized in that the means (11) for applying the sealing band are movable radially relative to the means (12) for supporting and feeding the container body.

52. The machine according to claim 50, characterized in that the means (11) for applying the sealing band are mounted on a plate (101) that is movable radially relative to the means (12) for supporting and feeding the container body.

53. The machine according to claim 31, characterized in that the means (12) for supporting and feeding the container body (A) comprise means (121) which bilaterally engages and rotates the container body (A) and which is mounted on a respective rotatable element (122).

54. The machine according to claim 53, characterized in that the means (12) for supporting and feeding the container body (A) comprise means (121) for bilaterally engaging and rotating the container body (A), mounted on a respective element (122) that rotates about an axis parallel to the axis of rotation of the means (11) for applying the sealing band and of the means (121) that rotate the container body.

55. The machine according to claim 31, characterized in that it comprises means for controlling the angular speed of the means (11) that apply the sealing band (B) in such a way that the tangential speed of the surface (111) for retaining and supporting the sealing band (B) is coordinated with the tangential speed of the lateral surface (A11) of the container body (A) at the point of reciprocal contact.

56. The machine according to claim 55, characterized in that it comprises means for controlling the angular speed of the means (11) that apply the sealing band (B) in such a way that the tangential speed of the surface (111) for retaining and supporting the sealing band (B) coincides with the tangential speed of the lateral surface (A11) of the container body (A) at the point of reciprocal contact.

57. The machine according to claim 55, characterized in that it comprises means for controlling the angular speed of the means (11) that apply the sealing band (B) in such a way that the tangential speed of the surface (111) for retaining and supporting the sealing band (B) coincides with the tangential speed of the lateral surface (A11) of the container body (A) at the point of reciprocal contact, during a first step of applying the sealing band.

58. The machine according to claim 57, characterized in that it comprises means for controlling the angular speed of the means (11) that apply the sealing band (B) in such a way that the tangential speed of the surface (111) for retaining and supporting the sealing band (B) is greater than the tangential speed of the lateral surface (A11) of the container body (A) at the point of reciprocal contact, during a subsequent step of applying the sealing band.

59. The machine according to claim 31, characterized in that the carousel that feeds the container body and the means that apply the sealing band are driven by respective, separate electric motors controlled by the electronic means that control the machine.

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