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(54) **PACKAGING ASSEMBLY, METHOD AND DEVICE FOR PRODUCING SUCH A PACKAGING ASSEMBLY**

VERPACKUNGSaufbau, METHODE UND MASCHINE ZUR HERSTELLUNG DES
VERPACKUNGSaufbaus

ENSEMBLE DE CONDITIONNEMENT, PROCEDE ET APPAREIL DE PRODUCTION DE
L'ENSEMBLE DE CONDITIONNEMENT

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Description

[0001] The present invention relates to a packaging assembly, comprising a container placed in a film bag that encloses the container on all sides, means that prevent container and film bag from shifting relative to each other being present between the bottom of said container and the part of the film bag lying underneath it.

[0002] Such a packaging assembly is used, for example, for packaging sliced foods such as meat products and cheese. It must, however, be understood that the invention is not restricted to such foods or to foods in general, but can be used for the packaging of any article in a film bag.

[0003] In the case of such packs the products concerned are placed in the container, and the container is subsequently placed on a web of film material. This can be either a tubular film provided with a longitudinal seam or a still open web that is subsequently wrapped around the pack. The pack is subsequently closed by welding together layers of film material lying opposite each other (sealing). If desired, a special atmosphere, such as a CO₂/N₂ or an oxygen atmosphere, is also introduced into the pack during the closure.

[0004] In this way very large numbers of packs can be produced at very high speed.

[0005] The pack can be slightly larger than the container in this case.

[0006] During the packaging of the containers with the web or tube of film material it does happen that the packaging process has to be interrupted for some reason or other. An example is if an interruption in the supply of products occurs. The packaging device is generally brought to a standstill abruptly. Owing to the low weight of the film web and the packs, an immediate standstill will be obtained when the various electric motors are switched off. However, the weight of the container and the product present in it is actually such that when there is an abrupt stoppage the product and container shift relative to the web of film material.

[0007] If the packaging line is subsequently started up again, which in principle can occur fully automatically, it may happen that the distance between adjacent containers is so small that a transverse seal can no longer be produced in the optimum way. In the most extreme case a transverse seam going through the container is produced. It will be understood that this gives rise to large quantities of spoiled product. Apart from loss of products, considerable waste is produced as a result, and external intervention is almost always necessary.

[0008] This means that in the food industry in particular, where operations involve regularly changing products, large quantities of spoiled product are produced, and the theoretically calculated production speed for packaging articles cannot be achieved.

[0009] US-A-5028147 discloses a container for packaging animal products with bones. A cardboard container that offers resistance to possible sharp edges is

present. This cardboard container is enclosed by a film bag. The product is offered to the packager in the unfolded state of the box, the unfolded box, i.e. the flat blank, being glued to the film material. The film bag is provided with a single longitudinal aperture and in a manner that is not illustrated in any further detail it is possible with much manipulation to construct the box from the flat blank, to fill it and subsequently to seal the single longitudinal edge of the film bag.

[0010] It is the object of the present invention to avoid the disadvantages described above with reference to a food pack, and to provide a packaging assembly or method and device respectively for packaging articles in the case of which these disadvantages do not occur.

[0011] This object is achieved in a packaging assembly of the type described above in that said dish-shaped container is a tray and said film bag comprises a rectangular film bag that is welded on three sides. Unlike the construction shown in US Patent Specification 5028147, the present invention relates to a tray, and not to a box that is to be folded. In order to place such a tray in a simple manner in a close-fitting film pack, this film pack is relatively open during the placing operation, so that it is necessary to make a welded seam on three sides.

[0012] The term tray in the present invention is understood to mean a one-piece article, in other words not provided with folds and the like, and preferably made of plastic such as polyethylene. Such a tray has a maximum height of 17 mm, and the dimensions (in top view) are a maximum of 25 x 20 cm. The method of sealing described above may comprise either a flow pack seal, a centre seal or a four-sided seal. In the first instance, a film web is wrapped around and the longitudinal seal is made at the position of an end edge of the tray. In the case of the centre seal, the longitudinal seal is made approximately in the centre of the tray, while in the case of a four-sided seal two film webs are placed one on top of the other and bonded to each other along the entire periphery.

[0013] More particularly, said means comprise adhesive such as hot-melt adhesive, which can be applied by means of dots of adhesive on, for example, the film web.

[0014] According to the invention, before the containers such as trays are placed on the film web, one or more dots of adhesive are applied to the film web, and the bottom of the tray is then placed in the adhesive, which is still capable of adhesion. This means that such adhesion occurs that when the movement of the (smooth) film web suddenly stops, the inertia will mean that the trays do not move any further, but stay in place. The packaging movement can consequently be stopped and restarted at any time, without there being a risk that upon subsequent restarting of the packaging line faults will occur during the sealing in the transverse direction.

[0015] Instead of the hot-melt adhesive described above, it is, of course, possible to use other types of

adhesive or other means of adhesion such as roughening and the like. However, another method of application, such as atomization, is also possible.

[0016] The adhesive is such that the connection between tray and film web is not permanent, since this connection is intended only for accurate positioning of the tray and the film web relative to each other during the production. The user must be able to separate the film web and tray from each other in a simple manner when opening the pack, without the tray being damaged in the process or residues of the film web remaining behind on the tray. In other words, it is preferable to use a type of adhesive that is such that at the time of separation of tray and film web the adhesion between adhesive and tray or film web is undone. In practice, the adhesion between the film web and adhesive will preferably be destroyed during the separation of tray and film web.

[0017] The invention also relates to a packaging assembly of the type described above, in which said adhesive connection between tray and film bag is such that the tray can be separated from the film bag without damage.

[0018] The invention also relates to a device for packaging articles, comprising a first packaging station, where said articles are placed in a container, and also a second packaging station, wherein said container is provided with a film bag that provides an all-round seal by placing said container on a film web and closing said film web around said container, the second packaging station comprising dispensing means for a means of adhesion.

[0019] The invention will be explained in greater detail below with reference to an exemplary embodiment illustrated in the drawing, in which:

Fig. 1 shows diagrammatically in side view a packaging system for packaging articles; and

Fig. 2 shows diagrammatically in a view from the bottom a packaging assembly according to the present invention.

[0020] In the figures a packaging assembly is indicated in its entirety by 1. Said assembly is composed of a tray 2 in which one or more products 3 are placed. A film bag 4 is placed around the tray with product. This film bag can comprise an open film web that is folded up and sealed, or it may be a tube with or without seam, in the case of which the ends are provided with a transverse seal.

[0021] Where a web material is used, the material is stored on a roll 8, illustrated in Fig. 1. The web is indicated by 9 and is turned round at 10, so that a substantially right-angled web is produced. The trays 2 are fed in on a feed conveyor 12. The product, such as slices of meat products or other articles, is placed in position in some way or other (not shown) at the feed elevator. The trays 2 are then placed on the underside of the web of film material, and the web of film material 9 is folded

around the trays 2, and a longitudinal seam (not shown) and transverse seams are provided at station 17. A cutting action is subsequently made through this seam, indicated at station 18.

[0022] According to the present invention, a number of dots of adhesive are placed on the web of film material before the trays 2 are placed on the web of film material. Reference numeral 13 indicates an adhesive metering device. Adhesive coming from a stock 15 is taken by way of a conduit 16 to a nozzle 14, where it is placed on the web of material. It is preferably placed on the web in the form of dots 5 (Fig. 2). This adhesive is preferably a hot-melt adhesive. It has been found that if the trays 2 are placed on the adhesive a relatively short time after the placing (possibly using pressure) of the dots of adhesive, adequate adhesion of the trays will be provided. In any case this adhesion is such that once the trays 2 have been placed on the web of film material, the tray 2 will no longer shift relative to the web of film material when the web of film material 9 stops suddenly if the packaging process is interrupted in some way or other. This means that the packaging process can be continued again immediately afterwards, without any risk of problems arising with the transverse welded seams at the welding station 17.

[0023] Surprisingly, it has been found that extremely small quantities of adhesive will suffice. A value of approximately 0.5 ml per dot of adhesive is mentioned as an example. A transparent hot-melt adhesive that is compatible with the products to be packaged and the packaging materials concerned can be used as the adhesive. An example of such an adhesive is Accomelt 40-554, obtainable from Adley Nederland B.V. in Uden in the Netherlands.

[0024] Although the invention is described above with reference to a preferred embodiment, it should be understood that numerous other possibilities exist for packaging products in film webs, which can be made of either plastic or paper, and in the case of which the problem of a container shifting inside an outer pack occurs. The currently proposed solution is applicable to such packs, and products other than adhesive can be used for the means of adhesion. Another idea is to provide additional friction locally or to provide profile in, for example, the film web, so that there can be engagement between container and film web. These and further modifications are obvious after the above and lie within the scope of the appended claims.

Claims

1. Packaging assembly (1), comprising a container (2) placed in a film bag (4) that encloses the container on all sides, means (5) that prevent container and film bag from shifting relative to each other being present between the bottom of said container and the part of the film bag lying underneath it, **charac-**

terized in that said dish-shaped container (2) is a tray and said film bag comprises a rectangular film bag that is welded on three sides.

2. Packaging assembly according to Claim 1, wherein said means comprise adhesive. 5
3. Packaging assembly according to one of the preceding claims, wherein said adhesive comprises hot-melt adhesive. 10
4. Packaging assembly according to Claim 2 or 3, wherein said adhesive is applied by means of dots of adhesive.
5. Packaging assembly according to one of the preceding claims, wherein said container comprises a tray (2). 15
6. Packaging assembly according to one of the preceding claims, wherein said adhesive connection between tray and film bag is such that the tray can be separated from the film bag without damage. 20
7. Method for packaging articles, comprising placing said articles in a container and enclosing said articles on all sides with a film web, such enclosure on all sides comprising feeding in a film web, placing said container on said film web and making welded seams in said film web, while the underside of said container and/or the part of the film web on which said container is placed is provided with means of adhesion before said container is placed on said film web, **characterized in that** said container comprises a tray, and **in that** said tray adheres to said film web after articles have been placed in said tray. 25
8. Method according to Claim 7, wherein said means of adhesion comprise adhesive. 30
9. Method according to Claim 7 or 8, wherein said film web is provided with dots of adhesive. 35
10. Device for packaging articles (3), comprising a first packaging station, where said articles are placed in a container (2), and a second packaging station, wherein said container is provided with a film bag that provides an all-round seal by placing said container on a film web and closing said film web around said container, **characterized in that** the second packaging station comprises dispensing means for a means of adhesion. 40
11. Device according to Claim 10, wherein said dispensing means comprise adhesive-dispensing means. 45

Patentansprüche

1. Verpackungsaufbau (1), umfassend einen Behälter (2), welcher in einer den Behälter auf allen Seiten umgebenden Folientasche (4) angeordnet ist, zwischen dem Boden des Behälters und dem darunterliegenden Teil der Folientasche vorhandene Mittel (5), welche ein Verschieben des Behälters und der Folientasche relativ zueinander verhindern, **dadurch gekennzeichnet, dass** der schüsselförmige Behälter (2) eine Schale ist und die Folientasche eine rechteckige, auf drei Seiten verschweißte Folientasche umfasst.
2. Verpackungsaufbau nach Anspruch 1, wobei die Mittel einen Klebstoff umfassen.
3. Verpackungsaufbau nach einem der vorhergehenden Ansprüche, wobei der Klebstoff einen Heißkleber umfasst.
4. Verpackungsaufbau nach Anspruch 2 oder 3, wobei der Klebstoff in Form von Klebstoffpunkten eingebracht wird.
5. Verpackungsaufbau nach einem der vorhergehenden Ansprüche, wobei der Behälter eine Schale (2) umfasst.
6. Verpackungsaufbau nach einem der vorhergehenden Ansprüche, wobei die Haftverbindung zwischen Schale und Folientasche derart ist, dass die Schale von der Folientasche ohne Beschädigung getrennt werden kann.
7. Methode zum Verpacken von Gegenständen, umfassend ein Anordnen der Gegenstände in einem Behälter und ein allseitiges Einschließen der Gegenstände mit einer Folienbahn, wobei das allseitige Einschließen ein Zuführen der Folienbahn, ein Anordnen des Behälters auf der Folienbahn und ein Herstellen von Schweißnähten auf der Folienbahn umfasst, während die Unterseite des Behälters und/oder der Teil der Folienbahn, auf dem der Behälter angeordnet wird, mit einem Haftmittel versehen wird, bevor der Behälter auf der Folienbahn angeordnet wird, **dadurch gekennzeichnet, dass** der Behälter eine Schale umfasst, und dass die Schale an der Folienbahn haftet, nachdem Gegenstände in der Schale angeordnet worden sind.
8. Methode nach Anspruch 7, wobei die Haftmittel Klebstoff umfassen.
9. Methode nach Anspruch 7 oder 8, wobei die Folienbahn mit Klebstoffpunkten versehen ist.
10. Maschine zum Verpacken von Gegenständen (3),

umfassend eine erste Verpackungsstation, wo die Gegenstände in einem Behälter (2) angeordnet werden, und eine zweite Verpackungsstation, bei welcher der Behälter mit einer Folientasche versehen wird, welche eine Rundumversiegelung bildet, indem der Behälter auf einer Folienbahn angeordnet und die Folienbahn rund um den Behälter verschlossen wird, **dadurch gekennzeichnet, dass** die zweite Verpackungsstation Abgabemittel für ein Haftmittel umfasst.

11. Maschine nach Anspruch 10, wobei das Abgabemittel Klebstoff-Abgabemittel umfasst.

Revendications

1. Ensemble de conditionnement (1), comprenant un récipient (2) placé dans un sachet pelliculaire (4) qui ferme le récipient sur tous les côtés, des moyens (5) qui empêchent le récipient et le sachet pelliculaire de se déplacer l'un par rapport à l'autre, disposés entre le fond dudit récipient et la partie du sachet pelliculaire qui se trouve en dessous de celui-ci, **caractérisé en ce que** ledit récipient (2) en forme d'assiette est un plateau et ledit sachet pelliculaire comprend un sachet pelliculaire rectangulaire qui est soudé sur trois côtés.
2. Ensemble de conditionnement selon la revendication 1, dans lequel lesdits moyens comprennent un adhésif.
3. Ensemble de conditionnement selon l'une des revendications précédentes, dans lequel ledit adhésif comprend un adhésif fusible à la chaleur.
4. Ensemble de conditionnement selon la revendication 2 ou 3, dans lequel ledit adhésif est appliqué au moyen de points d'adhésif.
5. Ensemble de conditionnement selon l'une des revendications précédentes, dans lequel ledit récipient comprend un plateau (2).
6. Ensemble de conditionnement selon l'une des revendications précédentes, dans lequel ladite liaison adhésive entre le plateau et le sachet pelliculaire est telle que le plateau puisse être séparé du sachet pelliculaire sans dommages.
7. Procédé de conditionnement d'articles, comprenant les étapes qui consistent à placer lesdits articles dans un récipient et à enfermer lesdits articles sur tous les côtés à l'aide d'une nappe pelliculaire, cette opération de fermeture de tous les côtés comprend les étapes qui consistent à amener une nappe pelliculaire, à placer ledit récipient sur ladite nappe

pe pelliculaire, et à former des soudures dans ladite nappe pelliculaire, la face inférieure dudit récipient et/ou la partie de la nappe pelliculaire sur laquelle ledit récipient est placé étant pourvues de moyens de collage avant que ledit récipient soit placé sur ladite nappe pelliculaire, **caractérisé en ce que** ledit récipient comprend un plateau, et **en ce que** ledit plateau adhère à ladite nappe pelliculaire après le placement des articles dans ledit plateau.

8. Procédé selon la revendication 7, dans lequel lesdits moyens de collage comprennent un adhésif.
9. Procédé selon la revendication 7 ou 8, dans lequel la nappe pelliculaire est pourvue de points d'adhésif.
10. Dispositif pour le conditionnement d'articles (3), comprenant un premier poste de conditionnement, au niveau duquel lesdits articles sont placés dans un récipient (2), et un deuxième poste de conditionnement, au niveau duquel ledit récipient est pourvu d'un sachet pelliculaire qui entraîne une étanchéité périphérique, par les opérations qui consistent à placer ledit récipient sur une nappe pelliculaire et à fermer ladite nappe pelliculaire autour dudit récipient, **caractérisé en ce que** le deuxième poste de conditionnement comprend des moyens de distribution pour des moyens de collage.
11. Dispositif selon la revendication 10, dans lequel lesdits moyens de distribution comprennent des moyens de distribution d'adhésif.

