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(54) **Outer package for packaged groups of rolls of products.**

Äussere Verpackung für verpackte Gruppen von Produktrollen

Emballage externe pour groupes de rouleaux de produits emballés

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(73) Proprietor: **Tissue Machinery Company S.p.A.**
40057 Cadriano di Granarolo Emilia (BO) (IT)

(72) Inventor: **DALL'OMO, Davide**
40132, BOLOGNA (IT)

(74) Representative: **Lanzoni, Luciano et al**
Bugnion SpA
Via Goito 18
40126 Bologna (IT)

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Description

[0001] The present invention relates to an outer package for packaged groups of rolls of products (and the method for its production).

[0002] The present invention is used in particular in the field of forming outer packages for groups of rolls of products, placed on top of one another, such as strips of kitchen or toilet paper.

[0003] In said technical field, the rolls of product are normally packaged in groups of products in a variety of formats, that is to say, containing a predetermined number of rolls which, for improved manageability and transport, are usually packaged in layers on top of one another (for example packs of 3x3, 4x2, 8x2, etc.).

[0004] To obtain these packs, there are known machines with devices known to experts in the trade as forming units, for stacking layers of rolls fed individually and one after another from a roll production unit located upstream of the forming unit.

[0005] The rolls, stacked in layers by the forming units, are then transferred to a packaging unit which packages them in a material consisting of a web (usually a plastic film) and closes this around the group, using sealing units, both longitudinally and at the front and rear of the group of products.

These groups of products packaged with film are then carried to a handling unit designed to allow the formation of loose batches of groups of products which can be directly positioned on pallets, or batches of groups of products sent to a bagging or overwrapping unit in which two or more groups of products are wrapped in another sheet of heat-sealable film to form a bag containing groups of products having a greater number of products (depending on the manufacturer's requirements).

[0006] A batch as above is known from US 4971197, wherein a first film of heat shrinkable material is used for forming a rigid set or package of dry cell batteries. Then, a plurality of said rigid set or packages are, in turn, pressed one against the other and packed together by means of a second film of the same heat shrinkable material, which wraps the plurality of set or packages into one single rigid pack.

[0007] As regards the afore-mentioned overwrapping of two or more groups of products, the outer package A of the packs P of rolls of products is currently produced as is clearly shown in Figure 1.

[0008] Said outer package A is produced by the bagging unit which forms the wrapper starting with a flat strip of packaging material film which, by means of special folding elements, is gradually folded over itself to create a tubular shape, supported from inside the wrapper being formed by suitable supporting elements and having longitudinal edges L1 and L2 which are drawn near one another.

[0009] Sealing means positioned in front of the wrapper and angled transversally to the tubular shape allow the wrapper to be sealed transversally to form, one after another, a closed front end T1 and rear end T2. Additional sealing means, angled longitudinally to the wrapper A and opposite the longitudinal edges L1 and L2, close the tubular wrapper A longitudinally with a seal S.

[0010] The longitudinal sealing means normally consist of a sealing bar, using an air jet, positioned above or at the edges L1 and L2 of the film, whilst below these edges L1 and L2 a plate is inserted to separate the sealing zone from the individual packs P of groups of products (through the rear part of the wrapper, not yet closed).

[0011] Such bagging units produce a low number of bags per unit of time compared with the packaging units which seal the groups of products: this is mainly because the sealing steps must be carried out with the edges of the overwrapping film separated or distanced from the packaged groups, to prevent contact between the films which could result in the overwrapping film and the film used for the packs being joined, or deterioration of the film used for the pack.

[0012] Therefore, in this context, the Applicant has invented and produced an outer package for packaged groups of rolls of products with characteristics which allow a faster step of closing by sealing and without risks of deterioration in the packs of groups of rolls of product inside it.

[0013] The technical purpose indicated and the aims specified are substantially achieved by an outer package for packaged groups or packs of rolls of products comprising the technical features described in one or more of the claims herein.

[0014] Further characteristics and advantages of the present invention are more apparent in the detailed description below, with reference to a preferred, non-limiting, embodiment of a unit for forming packs of products at a packaging machine and a relative method for forming packs of products, illustrated in the accompanying drawings, in which:

- Figure 1 is a perspective view of a known type of outer package for packaged groups or packs of rolls of products;
- Figure 2 is a perspective view of an outer package for packaged groups or packs of rolls of products in accordance with the present invention;
- Figure 3 is a schematic front view of the outer package from Figure 2;
- Figure 4 illustrates an enlarged detail from Figure 3;
- Figures 5, 6 and 7 are relative schematic perspective views of a sequence of steps of folding and closing the outer package in accordance with the present invention.

[0015] With reference to the accompanying drawings, and in particular with reference to Figure 2, the outer package, labelled 3 as a whole, is used to wrap groups of rolls of products which, in the preferred embodiment illustrated in the accompanying drawings, are preferably toilet or kitchen paper.

[0016] These groups of products 1 each consist of a plurality of rolls of products, grouped together to constitute a format, and wrapped and closed in a piece of plastic film 2 to form a pack C.

[0017] The outer package 3 comprises a sheet 4 of film for packaging one or more of the packs C. The sheet can be fed individually or continuously (for example from a reel, not illustrated) then cut to the appropriate size.

[0018] As also illustrated in Figures 5 to 7, the sheet 4 can be wrapped around the packs C of products by forming a tubular wrapper with the sheet 4 by gradually folding it in such a way as to obtain a tubular shape with a pair of longitudinal edges 5 and 6 and two external edges 7 and 8, front T1 and rear T2 of the outer package 3, which can be closed on the packs C by means of seals S1, S2 and S3.

[0019] This sheet 4 of film consists of a material with a heat conducting value A to allow the seals S1, S2, S3 to be made.

[0020] The sheet 4 also has, at least on the edges 9 of its surface 4a which can be placed opposite the packs C, a zone with heat conducting properties B lower than the afore-mentioned value A and designed to allow, respectively:

- a seal S1 for the pair of longitudinal edges 5 and 6 overlapping one another and close to the packs C and
- relative folding of the front and rear edges 7 and 8 to form two folded wings 7a and 8a for each edge 7 and 8, which can be placed overlapping one another, and can be sealed together at end zones S2 and S3.

[0021] Therefore, the presence of the edges 9 with lower heat conductivity allows the seals S1, S2 and S3 to be made without affecting the film 2 used for the packs C in the seal zones S1, S2 and S3.

[0022] For example, the edges 9 of the sheet 4 of film may have zones consisting of a substance with the afore-mentioned heat conducting values B lower than the heat conducting values A of the rest of the sheet 4.

[0023] As illustrated in Figures 3 and 4, the sheet 4 of film may consist of two layers 4a and 4b, forming the external surface 4a of the outer package 4 and, respectively, the internal surface 4b which can be placed opposite the packs C.

[0024] The internal layer 4b has the heat conducting values B designed to allow sealing of the edges 5 and 6 and of the end zones S2 and S3 of the wings 7a and 8a overlapping and close to the packs C.

[0025] Again in this case, obviously, the internal surface 4b of the sheet 4 of film consists of a substance with the heat conducting values B lower than the heat conducting values A of the upper surface 4a of the sheet 4 of film.

[0026] Alternatively, the sheet 4 of film may consist of two separate films 4a and 4b, joined together to form the afore-mentioned two layers, where the first film forms the internal surface 4a with the heat conducting values B lower than the heat conducting values A of the other film 4a forming the external surface of the sheet 4 of film.

[0027] Obviously, as already indicated, the sheet 4 may be fed individually, or continuously from a reel, and may be folded and sealed like the packs it is wrapped around thanks to the presence of the edges 9 or the internal layer or film 4b which prevents the heat generated from the outside for the sealing from causing a deterioration of or damaging the film 2 used for the packs C.

[0028] This possibility therefore allows the outer package folding and sealing steps to be performed more safely and with much faster production speeds, partly because it is possible to use apparatuses very similar to those used for forming the packs C.

[0029] The invention described has evident industrial applications and may be modified and adapted without thereby departing from the scope of the inventive concept as defined by the appended claims.

Claims

1. An outer package for groups of rolls of products, each group consisting of a plurality of rolls of products (1) grouped together to constitute a format, and wrapped and closed in a piece of plastic film (2) to form a pack (C); the outer package (3) comprising a sheet (4) of film for packaging one or more packs (C), which can be wrapped around said packs (C) of products by forming a tubular wrapper with the sheet (4) by gradually folding it in such a way as to obtain a tubular shape with a pair of longitudinal edges (5, 6) and two external edges (7, 8) , front (T1) and rear (T2) of the outer package (3), which can be closed on the packs (C) with relative seals (S1, S2, S3), the outer package being **characterised in that** the sheet (4) of film consists of a material with a heat conducting value (A), the sheet (4) having, at least on the edges (9) of its surface (4a) which can be placed opposite the packs (C), a zone with heat conducting properties (B) lower than said value (A) and designed to allow, respectively, a seal (S1) for the pair of longitudinal edges (5, 6) overlapping one another and close to the packs (C) and relative folding of the front and rear edges (7, 8) so that each forms two folded wings (7a, 8a), which can be placed overlapping one another, and can be sealed together at end zones (S2, S3), preventing the film (2) used for the packs (C) from being affected in the seal zones (S1, S2, S3).

2. The outer package according to claim 1, **characterised in that** the sheet (4) of film consists of two layers (4a, 4b), forming the external surface (4a) of the outer package (4) and, respectively, the internal surface (4b) which can be placed opposite the packs (C); the internal layer (4b) having the heat conducting values

(B) designed to allow sealing of the edges (5, 6) and the end zones (S2, S3) of the wings (7a, 8a) overlapping and close to the packs (C).

3. The outer package according to claim 1, **characterised in that** the edges (9) of the sheet (4) of film have zones consisting of a substance with said heat conducting values (B) lower than the heat conducting values (A) of the rest of the sheet (4)

4. The outer package according to claim 2, **characterised in that** the internal surface (4b) of the sheet (4) of film consists of a substance with said heat conducting values (B) lower than the heat conducting values (A) of the upper surface (4a) of the sheet (4) of film.

5. The outer package according to claim 2 or 4, **characterised in that** the sheet (4) of film consists of two separate films (4a, 4b), joined together so that the second forms the internal surface (4b) with the heat conducting values (B) lower than the heat conducting values (A) of the other film (4a) forming the external surface of the sheet (4) of film.

Patentansprüche

1. Äußere Verpackung für Gruppen von Produktrollen, wobei jede Gruppe aus mehreren Produktrollen (1) besteht, die zusammen gruppiert werden, um ein Format zu bilden und von einem Stück Kunststofffolie (2) umhüllt und eingeschlossen zu werden, so dass sie eine Pakkung (C) bilden; wobei die äußere Verpackung (3) einen Bogen (4) Folie zur Verpakkung einer oder mehrerer Packungen (C) beinhaltet, der um die Packungen (C) von Produkten gehüllt werden kann, indem eine röhrenförmige Umhüllung aus dem Bogen (4) gebildet wird, der hierzu nach und nach zu einer röhrenartigen Form gefaltet wird, die ein Paar Längskanten (5, 6) und zwei Außenkanten (7, 8) an der Vorderseite (T1) und Rückseite (T2) der äußeren Verpackung (3) aufweist, die mit entsprechenden Versiegelungen (S1, S2, S3) auf den Pakkungen (C) verschlossen werden können, wobei die äußere Verpackung **dadurch gekennzeichnet ist, dass** der Folienbogen (4) aus einem Material mit einem Wärmeleitfähigkeitswert (A) besteht und dass der Bogen (4) zumindest an den Kanten (9) seiner Oberfläche (4a), die gegenüber den Packungen (C) angeordnet werden kann, einen Bereich mit Eigenschaften der Wärmeleitfähigkeit (B) aufweist, die niedriger ist als der genannte Wert (A) und jeweils Folgendes ermöglicht: eine Versiegelung (S1) des Paares einander überlappender Längskanten (5, 6) in der Nähe der Packungen (C), bzw. die entsprechende Faltung der vorderen und hinteren Kanten (7, 8), um jeweils zwei gefaltete Flügel (7a, 8a) zu erhalten, die einander überlappend angeordnet und an den Endbereichen (S2, S3) miteinander versiegelt werden können, um zu verhindern, dass es für die zur Bildung der Packungen (C) verwendete Folie (2) in den Siegelbereichen (S1, S2, S3) Auswirkungen gibt.

2. Äußere Verpackung nach Anspruch 1, **dadurch gekennzeichnet, dass** der Folienbogen (4) aus zwei Lagen (4a, 4b) besteht, welche die äußere Oberfläche (4a) der äußeren Verpackung (4) bzw. die innere Oberfläche (4b) bilden, die gegenüber den Packungen (C) angeordnet werden kann; wobei die innere Lage (4b) die Wärmeleitfähigkeitswerte (B) aufweist, die es ermöglichen, die Versiegelung der Kanten (5, 6) und der Endbereiche (S2, S3) der Flügel (7a, 8a) auszuführen, die einander überlappen und nahe bei den Packungen (C) liegen.

3. Äußere Verpackung nach Anspruch 1, **dadurch gekennzeichnet, dass** die Kanten (9) des Folienbogens (4) Bereiche aufweisen, die aus einer Substanz mit den genannten Wärmeleitfähigkeitswerten (B) bestehen, die niedriger sind als die Wärmeleitfähigkeitswerte (A) des restlichen Bogens (4).

4. Äußere Verpackung nach Anspruch 2, **dadurch gekennzeichnet, dass** die innere Oberfläche (4b) des Folienbogens (4) aus einer Substanz mit den genannten Wärmeleitfähigkeitswerten (B) besteht, die niedriger sind als die Wärmeleitfähigkeitswerte (A) der oberen Oberfläche (4a) des Folienbogens (4).

5. Äußere Verpackung nach Anspruch 2 oder 4, **dadurch gekennzeichnet, dass** der Folienbogen (4) aus zwei getrennten Folien (4a, 4b) besteht, die so miteinander verbunden sind, dass die zweite davon die innere Oberfläche (4b) mit den Wärmeleitfähigkeitswerten (B) bildet, die niedriger sind als die Wärmeleitfähigkeitswerte (A) der anderen Folie (4a), welche die äußere Oberfläche des Folienbogens (4) bildet.

Revendications

1. Un emballage externe pour groupes de rouleaux de produits, chaque groupe consistant en une pluralité de rouleaux de produits (1) regroupés ensemble pour constituer un format, et emballés et enfermés dans un morceau de film plastique (2) pour former un paquet (C) ; l'emballage externe (3) comprenant une feuille (4) de film pour emballer un ou plusieurs paquets (C), qui peut être enveloppée autour desdits paquets (C) de produits en formant une enveloppe tubulaire avec la feuille (4) elle-même, en la pliant progressivement de manière à obtenir une forme tubulaire présentant une paire de bords longitudinaux

(5, 6) et deux bords extérieurs (7, 8), avant (T1) et arrière (T2) de l'emballage externe (3), qui peuvent être fermés sur les paquets (C) au moyen de soudures (S1, S2, S3) respectives, l'emballage externe étant **caractérisé en ce que** la feuille (4) de film consiste en un matériau ayant une valeur (A) de conductibilité thermique, la feuille (4) ayant, au moins sur les bords (9) de sa surface (4a) pouvant être placée face aux paquets (C), une zone ayant des propriétés de conductibilité thermique (B) inférieures par rapport à ladite valeur (A) et destinée à permettre, respectivement, une soudure (S1) pour la paire de bords longitudinaux (5, 6) superposés entre eux et à proximité des paquets (C) et un pliage relatif des bords avant et arrière (7, 8) de manière à ce que ceux-ci forment chacun deux rabats repliés (7a, 8a), qui peuvent être superposés l'un sur l'autre et peuvent être soudés ensemble au niveau de zones d'extrémité (S2, S3), évitant ainsi que le film (2) utilisé pour les paquets (C) soit affecté dans les zones de soudure (S1, S2, S3).

2. L'emballage externe selon la revendication 1, **caractérisé en ce que** la feuille (4) de film consiste en deux couches (4a, 4b) constituant la surface extérieure (4a) de l'emballage externe (4) et, respectivement, la surface intérieure (4b) pouvant être placée face aux paquets (C) ; la couche intérieure (4b) ayant des valeurs (B) de conductibilité thermique destinées à permettre une soudure des bords (5, 6) et des zones d'extrémité (S2, S3) des rabats (7a, 8a) superposés et à proximité des paquets (C).

3. L'emballage externe selon la revendication 1, **caractérisé en ce que** les bords (9) de la feuille (4) de film présentent des zones constituées d'une substance ayant lesdites valeurs (B) de conductibilité thermique inférieures aux valeurs (A) de conductibilité thermique du reste de la feuille (4).

4. L'emballage externe selon la revendication 2, **caractérisé en ce que** la surface intérieure (4b) de la feuille (4) de film est constituée d'une substance ayant lesdites valeurs (B) de conductibilité thermique inférieures aux valeurs (A) de conductibilité thermique de la surface supérieure (4a) de la feuille (4) de film.

5. L'emballage externe selon la revendication 2 ou 4, **caractérisé en ce que** la feuille (4) de film consiste en deux films distincts (4a, 4b), unis ensemble de manière à ce que le deuxième constitue la surface intérieure (4b) ayant les valeurs (B) de conductibilité thermique inférieures aux valeurs (A) de conductibilité thermique de l'autre film (4a) constituant la surface extérieure de la feuille (4) de film.

FIG. 1

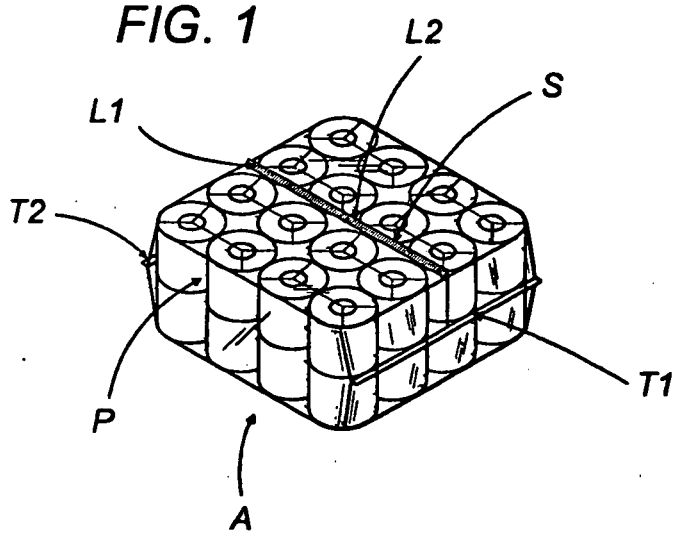


FIG. 2

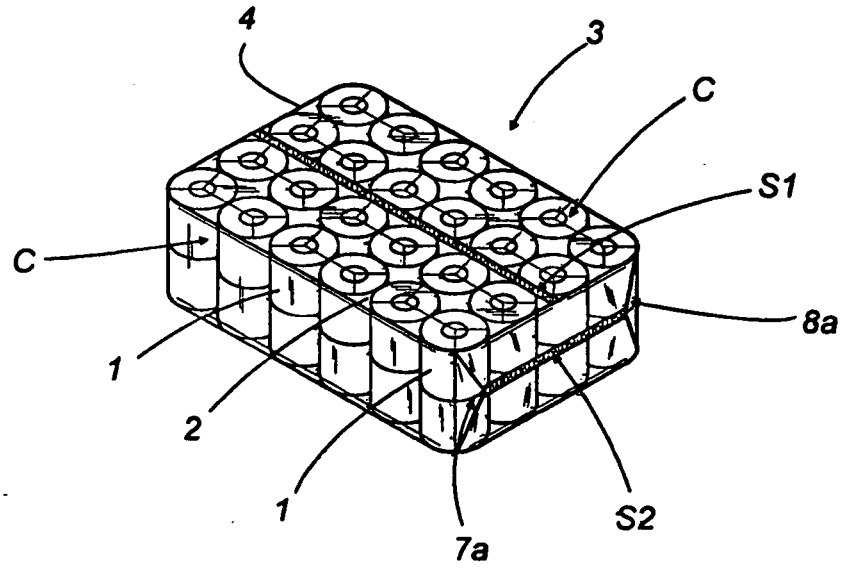


FIG. 3

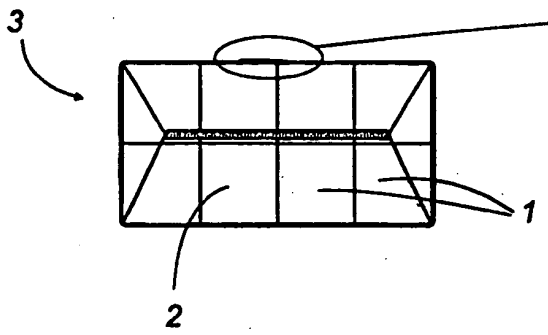


FIG. 4

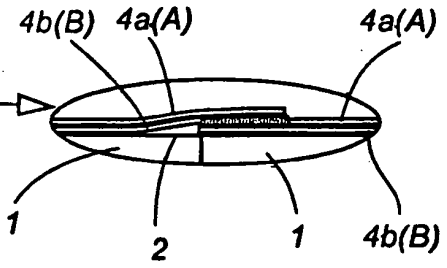


FIG. 5

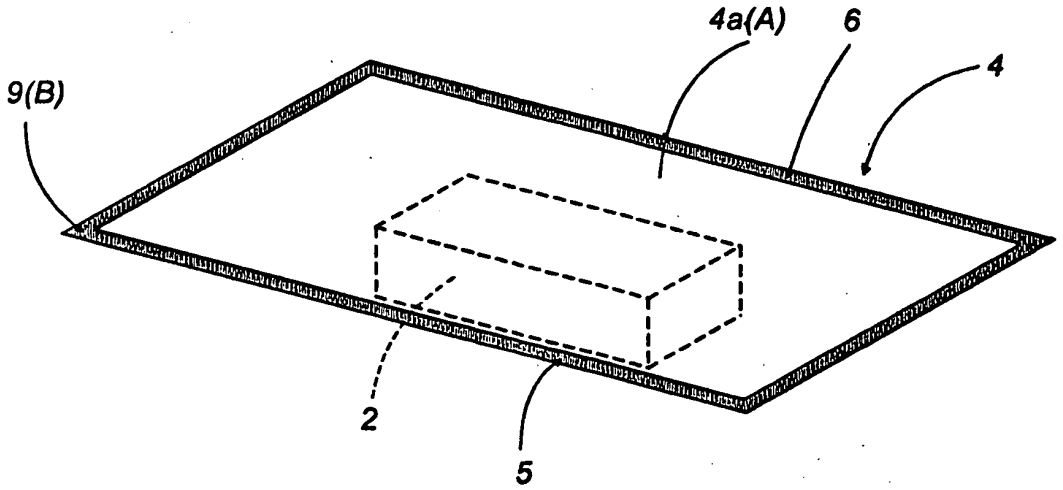


FIG. 6

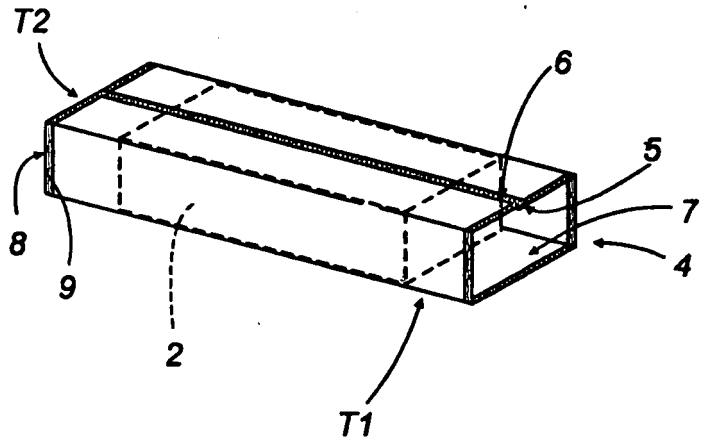
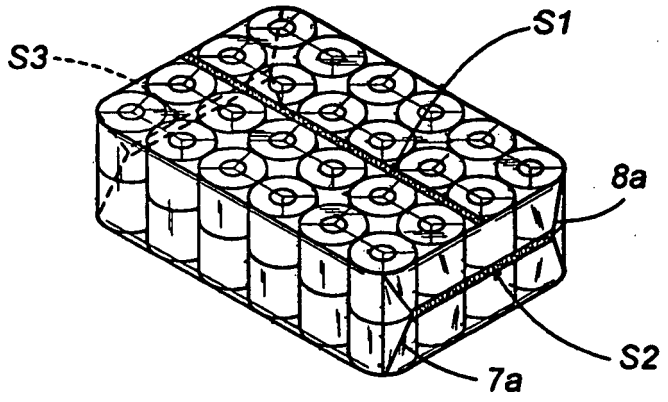


FIG. 7



REFERENCES CITED IN THE DESCRIPTION

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