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(54) Packaging method for books.

(57) The invention relates to a packaging method for books. Around a book or a bundle of books is first wrapped a shrink plastic film (4) which protects the book during storage and handling. A book package (1) enclosed in shrink plastics (4) is brought on top of a separate blank of cardboard (2) and the shrink plastics (4) is applied by means of an adhesive or by heating to the surface of said blank of cardboard (2). The blank of cardboard (2) is folded either manually or mechanically around four sides of the book package (1) with two sides uncovered.

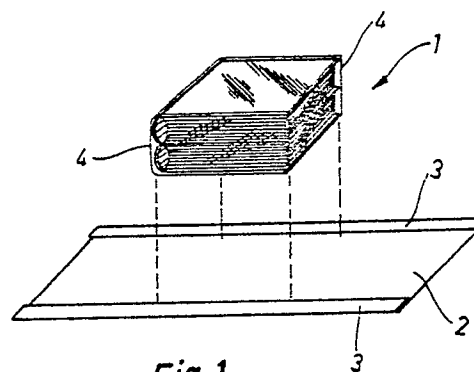


Fig. 1

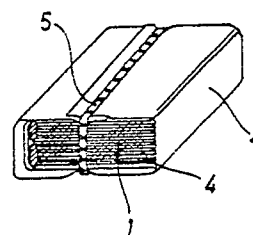


Fig. 2

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Packaging method for books

The present invention relates to a packaging method for books, wherein the books are first wrapped in a pliable protective wrapper and then in a rectangular blank of cardboard which is folded around six sides of a book package leaving two sides uncovered.

This type of packaging method and a packaging blank used in the method are known from the Applicant's US Patent publication 4 627 223. Thus, this prior known method employs a packaging blank in which a protective wrapper has already been applied to the surface of a sheet of cardboard. A protective wrapper is made of a more pliable material and can be manually wrapped around the books to be packaged. A blank of cardboard consisting of a more rigid material can be folded either manually or mechanically. An apparatus for mechanical folding is disclosed in the Applicant's US Patent publication 4 757 666.

An object of the invention is to develop further this prior known packaging method in a manner that the books can be protected also during storage and handling prior to the actual packaging operation.

This object is achieved by means of a method of the invention on the basis of the characterizing features set forth in the annexed claims.

A method of the invention will now be described in more detail with reference made to the accompanying drawings, in which

fig. 1 is a perspective view of the components of a package at one stage of a packaging method and

fig. 2 shows a finished package prepared by the method of the invention.

According to a method of the invention, a book or a bundle of books are closed in a shrink plastic protective wrapper 4 to form a package 1. This wrapping in shrink plastic 4 can be effected at any stage at all, preferably at such an early stage, however, that plastic film 4 protects the books during storage and handling. It is essential that plastic film 4 makes up a part of a package to be prepared later for mailing a book or books to individual receivers.

A second component of the package comprises a rectangular blank of cardboard 2, preferably with reinforcing strips 3 folded at its edges. A blank of cardboard may consist of kraft board or corrugated board which is sufficiently rigid for providing protection for a book parcel 1 against bumps and blows. A blank of cardboard 2 can be coated with plastics, e.g. a film of polyethylene plastic, or it can be coated with an adhesive capable of stick-

ing to shrink plastic film 4.

A book parcel 1 wrapped in shrink plastic 4 is placed and fastened on top of a blank of cardboard 2. Especially in view of mechanically folding said blank of cardboard 2, package or parcel 1 is positioned and fastened in the central area of blank of cardboard 2. From different sizes of cardboard blanks 2 such a blank is picked that parcel 1 can be placed between reinforcing strips 3.

If the surface of a blank of cardboard 2 carries an adhesive, a plastic film 4 sticks to it simply by pressing a parcel 1 in position and by folding the ends of a blank of cardboard 2 around said package or parcel 1. If the surface of a blank of cardboard 2 is made of a PE-film, the fastening is effected e.g. by heating in two steps in a manner that one side of package 1 is first stuck to the surface of a flat blank of cardboard 2 and, after folding the ends of said blank of cardboard 2, another heating is effected for sticking the shrink plastic 4 also to the surfaces of the folded sides of a blank of cardboard 2.

If a package 1 is fastened only at its bottom side to the surface of a blank of cardboard 2, it is preferable to make sure that package 1 stays securely inside said folded blank of cardboard 2 by winding around a package a band, a tape or a string 5 which runs over the sides that remain uncovered by a blank of cardboard 2.

The overlapping ends of a blank of cardboard 2 can be fastened to each other by an adhesive, by heating (PE-plastic film coating) or by providing the facing surfaces with self-adhesive layers (coated with a self-adhesive glue).

A shrink plastic film 4 surrounding a parcel or package 1 preferably covers said package 1 on all eight sides. Since wrapping of articles in a shrink plastic film is a conventional and generally applied method, its execution is not explained in more detail in this context. There are commercially available devices intended for wrapping articles in shrink plastics.

The invention is not limited to the above-described embodiment. Instead of shrink plastics, it is also possible to employ so-called constriction type of plastics for obtaining a tight preliminary package wrapped in a plastic film by stretching the plastic while wrapping it around an article. A method of the invention can of course be applied also to packaging cassettes, piles of forms or the like flat-shaped (book-like) articles.

Claims

1. A packaging method for books, wherein the books are first wrapped in a pliable protective wrapper (4) and then in a rectangular blank of cardboard (2) which is folded around six sides of a book package (1) leaving two sides uncovered, **characterized** in that

- a book or a bundle of books is enclosed inside a shrink plastic protective wrapper (4) and thus protected the books are maintained during storage and handling prior to the final preparation of a package,
- a book package (1) enclosed in shrink plastics (1) is brought on top of a separate blank of cardboard and the shrink plastics (4) is applied by means of an adhesive or by heating to the surface of said blank of cardboard (2) and
- a blank of cardboard (2) is folded in a conventional manner either manually or mechanically for closing the package.

2. A method as set forth in claim 1, **characterized** in that during or after the folding of a blank of cardboard (2) said shrink plastics (4) is applied by means of an adhesive or by heating to the surfaces of the folded sides of a blank of cardboard in a manner that shrink plastics (4) and blank of cardboard (2) are stuck to each other on more than one of the sides of a book package (1).

3. A method as set forth in claim 1 or 2, **characterized** in that a plastic-coated blank of cardboard (2) is applied by heating to shrink plastics (4).

4. A method as set forth in claim 1, **characterized** in that around a finished package is wound a band, a tape or a string (5) which runs over the sides uncovered by said blank of cardboard (2).

5. A method as set forth in any of claims 1 - 4, **characterized** in that the overlapping ends of a blank of cardboard (2) are stuck to each other by glueing, by heating or by pressing self-adhesive surfaces against each other.

6. A method as set forth in any of claims 1 - 5, **characterized** in that a book package (1) enclosed in shrink plastics (4) is placed and secured in the central area of a blank of cardboard (2), between reinforcing strips (3) folded at the edges of said blank of cardboard (2).

7. A method as set forth in any of claims 1 - 6, **characterized** in that the shrink plastics is replaced by so-called constriction plastics.

8. A method as set forth in any of claims 1 - 7, **characterized** in that the method is applied to packaging cassettes, piles of forms or the like flatshaped articles.

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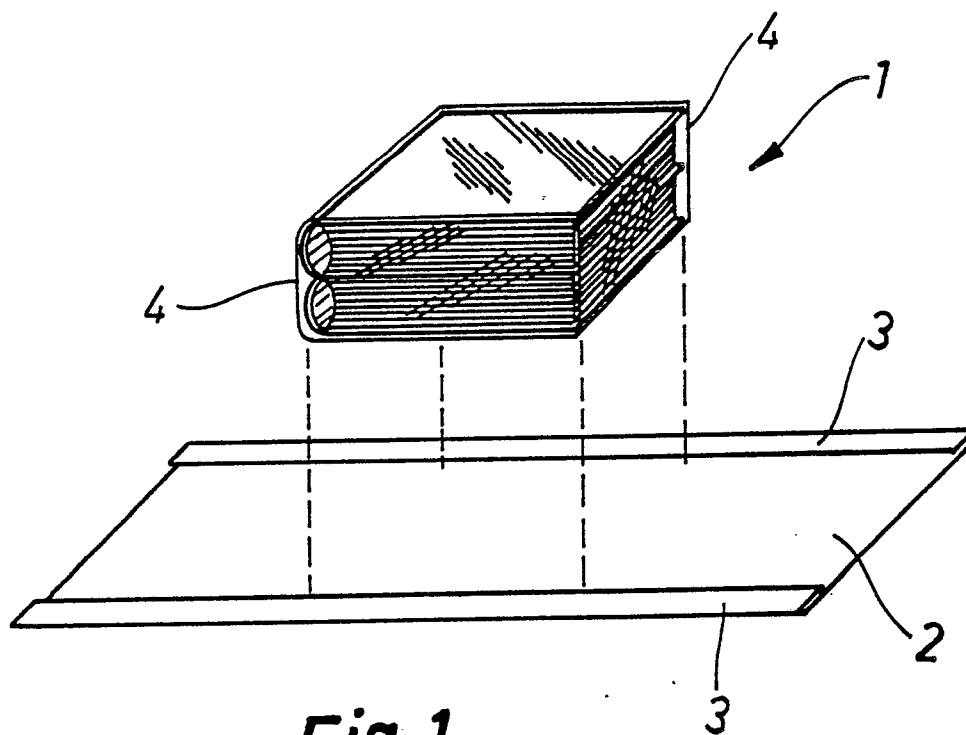


Fig. 1

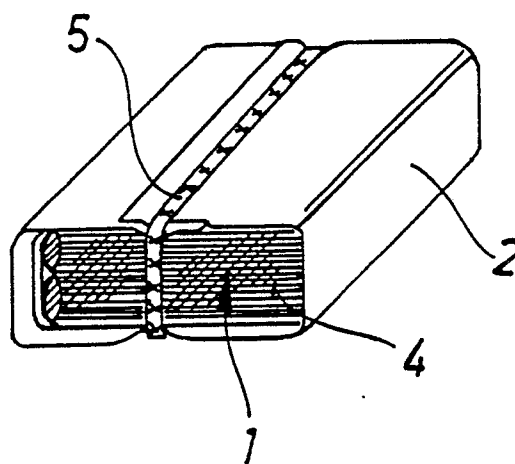


Fig. 2



DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl. 4)
Y	EP-A-0 035 912 (THE MEAD CORP.) * Figures 5,6,14,15; page 5, line 16 - page 6, line 10; page 9, lines 11-30 * ---	1-6,8	B 65 D 75/38 B 65 D 75/02 B 65 B 11/58
Y	DE-A-1 959 284 (SCHWEIZERISCHE INDUSTRIE-GESELLSCHAFT) * Figures 1,2; page 2, lines 11-20,23-28; especially claim 1 * ---	1-6,8	
Y,D	WO-A-8 302 764 (V. JANHONEN) * Figures 1-3; page 3, lines 8-20; claims 1,5 * ---	4,6	
Y	FR-A-2 280 548 (V. JANHONEN) * Figures 1b,1c,2; page 2, lines 5-22; claim 1 * A -----	5,2 1	
			TECHNICAL FIELDS SEARCHED (Int. Cl.4)
			B 65 D B 65 B
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 11-08-1989	Examiner PERNICE, C.
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons ----- & : member of the same patent family, corresponding document			