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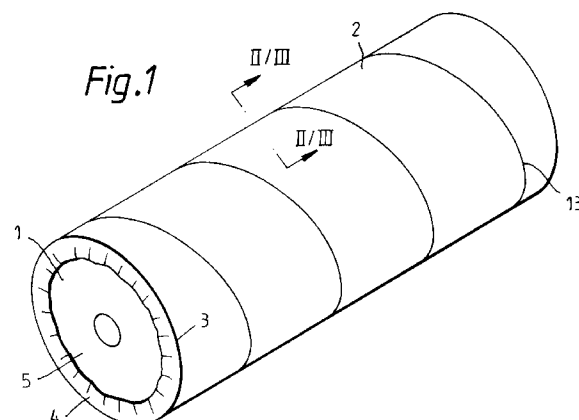
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(54) **Protective packaging for cylindrical objects such as paper reels.**

(57) A method of packaging a cylindrical object (1) for impact resistance characterised by wrapping the reel with cellulose wadding (6).



This invention relates to improvements in protective packaging for cylindrical objects such as paper reels, and more particularly for reels of pressure-sensitive copying paper.

European Patent Application No. 88310778.2 (Publication No. 0 276 174) is directed to a process and apparatus for protectively packaging a roll or pressure-sensitive sheet material and to a roll of such material so packaged. More particularly, the aforesaid patent application proposes the wrapping of such a reel with interleaved sheet foam and synthetic plastics film material, the foam preferably being a polyolefin packaging foam and the synthetic plastics film preferably being a polyethylene or polyvinyl chloride stretch film.

Whilst the packaging system described in the above numbered patent application provided adequate protection for the reel or pressure-sensitive paper, it has now been found that the polyolefin sheet foam or the polyurethane sheet foam which is also sometimes used in such packaging, may present environmental problems during disposal after removal from the reel by the user.

It is among the objects of the present invention to provide a protective packaging system for carbonless reels or other cylindrical objects including a cushioning material which does not present the same difficulties in disposal.

According to the present invention a method of packaging a cylindrical object for impact resistance is characterised by wrapping the reel with cellulosic wadding. The object can comprise a reel of pressure-sensitive material such as carbonless copying paper. Typically the wadding would be circumferentially or helically wrapped around the object or reel.

The wadding may be faced on one or both sides with a paper sheet which may optionally comprise a stretchable paper such as crepe paper. The packaging may also comprise a film, for example a stretch film, which is applied over or interleaved with the cellulosic wadding.

The wadding and film may extend over the edges of the reel at each end so as to partially cover the end faces of the reel and provide protection for the edges.

The paper wadding may for example comprise a 40 gm² paper sheet and 8 plies of 22.5 gm² recycled unbleached tissue laminated together by a starch size adhesive, the sheet wadding having a width of 330 mm. A suitable wadding is available from Papierfabrik Hedwigsthal, D-5419 Raubach (Westerwald), Federal Republic of Germany.

An alternative paper wadding which may be used comprises a 45 g/m² paper sheet, for example imitation embossed parchment and 4 plies of 25 g/m² recycled unbleached tissue laminated together by embossing with a series of circular hatched patterns approximately 8 mm in size and at a spacing of 5 cms in both cross and machine directions. This wadding is

available from Jiffy Packaging Co. Ltd., Industrial Estate, Winsford, Cheshire, CW7 3QJ, United Kingdom.

A suitable stretch film is 30 micron unpigmented polyethylene film having a width of 460 mm and available from DRG Plastic Films, Carsons Road, Mengotsfield, Bristol BS17 3LN, United Kingdom.

The invention also includes a cylindrical object such as a reel of pressure sensitive copying paper packaged for impact resistance, the packaging comprising cellulosic sheet wadding wrapped around the object.

The invention will now be further described by way of example with reference to the accompanying drawings in which:-

Figure 1 is a perspective view of a reel of pressure-sensitive carbonless copying paper wrapped according to the invention;

Figure 2 is a sectional detail of a first wrapping configuration on the line II/III - II/III of Figure 1;

Figure 3 is a sectional detail of an alternative wrapping configuration on the line II/III - II/III of Figure 1;

Figure 4 is an enlarged sectional elevation through part of a sheet of cushioning material which may be used in the packaging system of the invention; and,

Figure 5 is a sectional elevation of a portion of an alternative form of cushioning material which may be used in the packaging system of the invention.

Referring first to Figure 1, this shows a reel 1 of pressure-sensitive copying paper in packaging 2 which is wrapped circumferentially or helically around the reel 1 as indicated by reference numeral 13 and which extends over the end edges 3 and partially radially inwardly at 4 over the end faces 5 of the reel.

Figure 2 shows a first packaging configuration according to the invention in which paper reel 1 is wrapped with alternating interleaved layers of cellulosic sheet wadding 6 and stretch film 7. Figure 3 shows a second packaging configuration in which the reel is sequentially wrapped with layers of cellulosic sheet wadding 8 and stretch film 9.

The paper wadding layers 6 and 8 of figures 2 and 3 may for example comprise a wadding layer 10, as shown in Figures 4 and 5, adhered to a paper surfacing layer 11 on one side as shown in Figure 4 or paper surfacing layers 12 on both sides as shown in Figure 5. To facilitate differential stretching during helical wrapping, the paper layers 11 and 12 may be formed of crepe paper which provides some degree of stretchability.

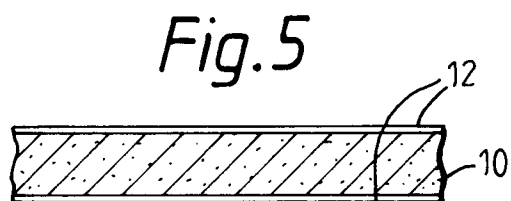
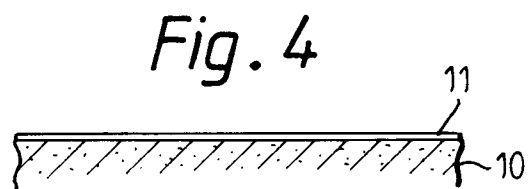
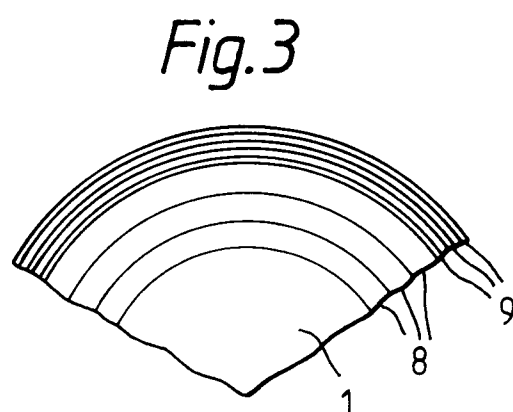
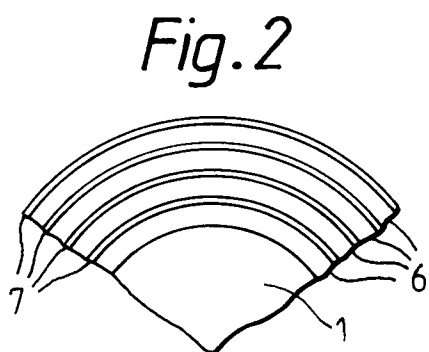
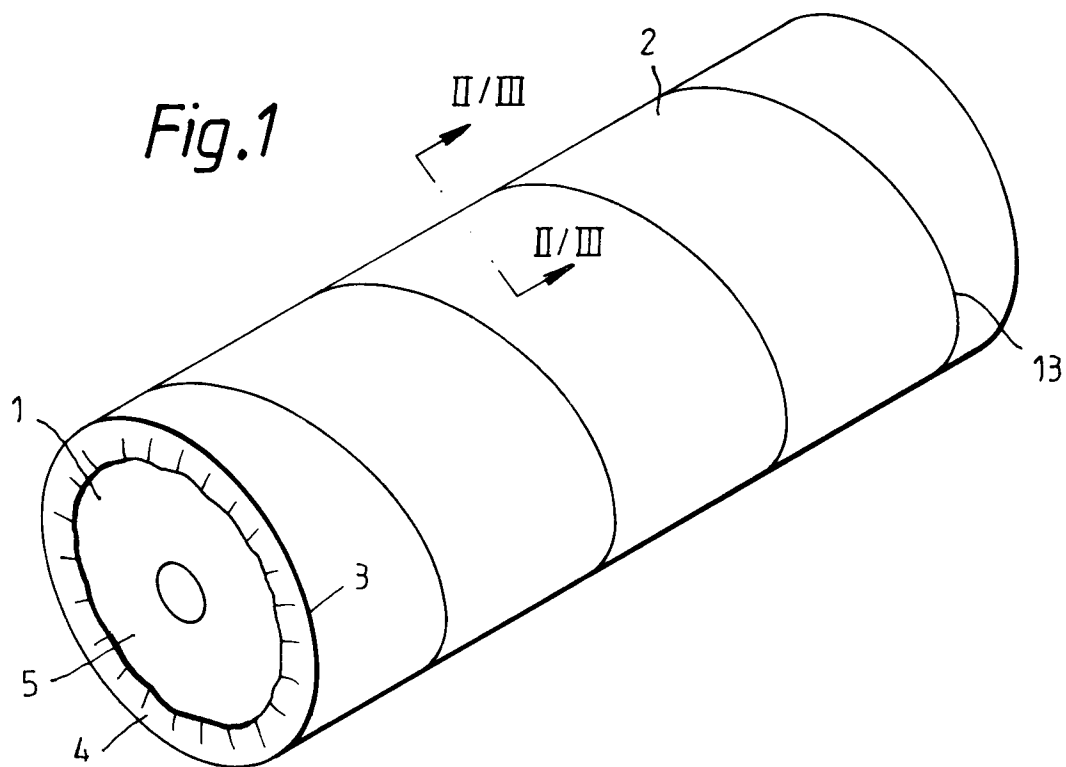
Claims

1. A method of packaging a cylindrical object (1) for impact resistance characterised by wrapping the

reel with cellulose wadding (6).

size and at a spacing of 5 cms in both cross and machine directions.

2. A method as claimed in claim 1 characterised in that the object comprises a reel (1) of pressure sensitive material. 5
3. A method as claimed in claim 2 characterised in that the pressure sensitive material is carbonless copying paper. 10
4. A method as claimed in claim 1, claim 2 or claim 3 characterised in that the wadding (6) is circumferentially or helically wrapped around the object (1). 15
5. A method as claimed in claims 1 to 4 characterised in that the wadding (6) is faced on one or both sides with a paper sheet (11)(12).
6. A method as claimed in claim 5 characterised in that the paper sheet (11)(12) is stretch paper. 20
7. A method as claimed in claims 1 to 6 characterised in that the wadding (6), with or without the paper sheet, is overlaid or interleaved with film (7). 25
8. A method as claimed in claim 7 characterised in that the film (7) is a stretch film.
9. A method as claimed in claims 1 to 8 characterised in that the cellulosic wadding (6) is in the form of a continuous length. 30
10. A method as claimed in claim 9 characterised in that the wadding (6) provides annular wraps around the edges (3) at each end of the object (1) and circumferential or helical wraps between the two annular wraps at the ends (3). 35
11. A method as claimed in claim 10 characterised in that the circumferential or helical wraps overlap. 40
12. A method as claimed in claims 1 to 11 characterised in that the cellulosic wadding (6) comprises a 40 gm² paper sheet and 8 plies of 22.5 gm² recycled unbleached tissue laminated together by a starch size adhesive, the sheet wadding (6) having a width of 330 mm. 45
13. A method as claimed in claims 1 to 11 characterised in that the cellulosic wadding (6) is a paper wadding comprising 45 g/m² paper sheet and 4 plies of 25 g/m² recycled unbleached tissue laminated together by embossing. 50
14. A method as claimed in claim 13 characterised in that the laminate is embossed with a series of circular hatched patterns approximately 8 mm in 55





European Patent
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EUROPEAN SEARCH REPORT

Application Number

EP 92 30 5486

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.5)
X	FR-A-1 098 085 (L.BEAUMET - BONNAIRE) * claim 1; figures *	1-4, 9, 10	B65D65/42
A	CH-A-282 744 (SÜDDEUTSCHE WELLPAPPENFABRIK W.SEIFERT) * page 2, paragraph 1; figures *	1-5, 7, 9, 12	
A	US-A-3 055 576 (A.F.OTTINGER) * figure 3 *	1, 4, 12	
A,P	EP-A-0 443 506 (K.HEINIGER) * abstract; figures *	1, 10	
A	EP-A-0 105 039 (HOLMENS BRUK AKTIEBOLAG) * abstract; figures *	1	
A,P	EP-A-0 456 117 (HAINES & EMERSON) * abstract; figures *	1	
A	WO-A-8 807 009 (YHTYNEET PAPERITEHTAAT OY) * abstract *	1, 6, 8	
			TECHNICAL FIELDS SEARCHED (Int. Cl.5)
			B65D
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 19 OCTOBER 1992	Examiner AMEDEO ZANGHI
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			

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