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(72) Inventors:
• Fuss, Gunter G.
San Mateo, California 94401 (US)
• Clazie, Ronald N.
Menlo Park, California 94015 (US)
• Yampolsky, Vladimir
San Carlos, California 94070 (US)

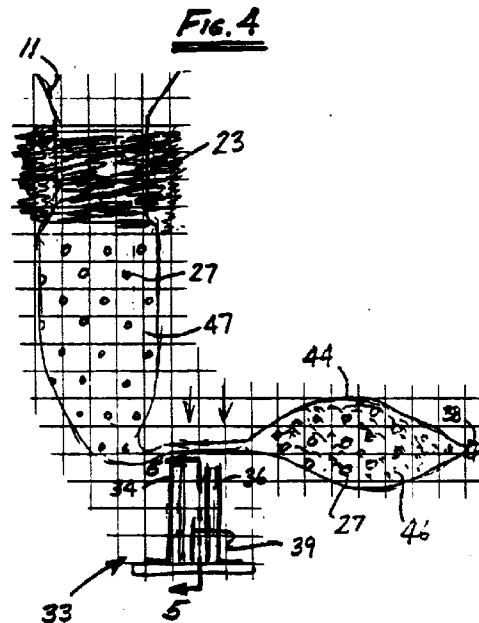
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(74) Representative: Bayliss, Geoffrey Cyril et al
BOULT WADE TENNANT,
27 Furnival Street
London EC4A 1PQ (GB)

(71) Applicant: Free-Flow Packaging International,
Inc.
Redwood City California 94063 (US)

(54) System and method for making cushions of loose fill packing material, and cushion made therewith

(57) There is disclosed a method of packaging loose fill packing material in bags for use as cushions in shipping cartons, wherein a length of flexible plastic tubing is gathered to form a coil from which successive sections can be pulled; the coil is positioned about the outlet of a packing material dispenser; a first section of the tubing is pulled from the coil, closed at its lower end, filled with packing material. A second section of the tubing is pulled from the coil; the tube is drawn together between the two sections, the closed ends of which one then secured; and screwing the tubing between the two sections. The bag sealer and cutter has a guide for directing a portion of flexible tubing which has been gathered together along a predetermined path in a direction which is generally perpendicular to the axis of the tubing, a pair of tape applicators positioned side-by-side for simultaneously applying bands to the gathered together portion of the tubing as the tubing travels along the path, and a knife disposed in the path of the tubing after the applicators for cutting the tubing apart between the bands of tape.



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EUROPEAN SEARCH REPORT

Application Number
EP 97 30 4660

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.6)
X	GB 1 564 397 A (BANKS)	17,19,20	B65B9/15 B65B67/06 B65D81/05
Y	* page 6, line 103 - page 9, line 16; figure 4 *	1-3,21, 35-40	
X	FR 75 342 E (SACHERIE D'ARTOIS)	17,19,20	
X	* page 3, left-hand column, paragraph 10 - page 4, left-hand column, paragraph 4; figures 1,4 *		
X	EP 0 456 144 A (IRICO)	42,43, 45,48,49	
Y	* the whole document *	3,21, 35-40, 44,46	
Y	DE 93 14 731 U (DDS-MASCHINENBAU)	1-3	TECHNICAL FIELDS SEARCHED (Int.Cl.6) B65B B65D B31D
Y	* page 4, last paragraph - page 5, paragraph 1; figures *		
Y	WO 94 06687 A (NOVEM TRADING INTERNATIONAL)	37,44	
Y	* page 5, line 27 - line 31; figure 3 *	40,46	
Y	US 3 281 089 A (KRUEGER ET AL.)		
	* column 2, line 1 - line 32; figure 2 *		
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 25 September 1997	Examiner BRIDAULT, A
CATEGORY OF CITED DOCUMENTS		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	
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			

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CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing more than ten claims.

- All claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for all claims.
- Only part of the claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims and for those claims for which claims fees have been paid.
namely claims:
- No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims.

LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirement of unity of invention and relates to several inventions or groups of inventions.

namely:

See sheet -B-

- All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.
- Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid.
namely claims:
- None of the further search fees has been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims.

namely claims: 1-3, 17, 19-21, 35-49



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LACK OF UNITY OF INVENTION
SHEET B

Application Number
EP 97 30 4660

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

1. Claims: 1-3, 17, 19-21, 35-49

A method and apparatus for packaging loose fill packing material in bags with special means for closing the bags.

2. Claim : 1+4

A method for packaging loose fill packing material in bags wherein the tubing is severed immediately after the closed ends of the two sections are secured together.

3. Claims: 1+6, 1+7

Use of packaging cushions.

4. Claims: (1+8), 9-15, (17+18), 22-34

A method and apparatus for packaging loose fill packing material in bags, characterised by the means for retaining the coil of tubing material.

5. Claim : (1+16)

A method for packaging loose fill packing material in bags characterised by the tubing material prior to use thereof.

6. Claims: 50-65

An apparatus for packaging loose fill packing material in bags characterised by a laterally collapsible core.

7. Claim : 66

A cushion.

N.B. There was no claim nr. 5 in the application as filed.

The reasons are as follows:

INDEPENDENT CLAIMS:

Considering the prior art cited in the partial search report, the special technical features (in the sense of Rule 30(1) EPC) of the independent claims are the following:



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LACK OF UNITY OF INVENTION
SHEET B

Application Number
EP 97 30 4660

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

Claim 1: none;
 Claim 17: none;
 Claim 22: fingers for engaging the tubing;
 Claim 28: fingers and a ring for retaining the tubing;
 Claim 33: fingers for retaining the tubing and means for limiting upward movement of the core;
 Claim 35: none;
 Claim 42: none;
 Claim 48: none;
 Claim 50: a laterally collapsible core;
 Claim 66: a cushion made from a portion of tubing, the ends of which are closed by pieces of tape.

There are therefore no same or corresponding special technical features linking the following claims or groups of claims:

claim 1;
 claim 17;
 claims 22, 28 and 33;
 claim 35;
 claim 42;
 claim 48;
 claim 50;
 claim 66.

DEPENDENT CLAIMS:

Since claims 1, 17, 35, 42 and 48 are not allowable, the claims which depend directly on them must be considered as independent claims for assessing unity of invention. The special technical features of these claims relate to:

claim 2: securing the ends of the tubing;
 claim 3: securing the ends of the tubing;
 claim 4: severing the two sections;
 claim 6: use of the cushion;
 claim 7: use of the cushion;
 claim 8: fingers for holding the coil;
 claim 16: the tubing prior to use;
 claim 18: coil holder;
 claim 19: closing the tube;
 claim 36: tape applicators;
 claim 38: cutters for the tapes;
 claim 40: mounting the rolls of tape;
 claim 41: mounting the rolls of tape;
 claim 43: mechanism of the tape applicator;
 claim 45: cutters for the tapes;
 claim 46: mounting the rolls of tape;
 claim 47: mounting the rolls of tape;
 claim 49: cutters for the tapes.



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LACK OF UNITY OF INVENTION
SHEET B

Application Number
EP 97 30 4660

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

It appears from this list that the following claims or groups of claims are not linked by any same or corresponding special technical features:

claims 2, 3, 19, 36, 38, 40, 41, 43, 45, 46, 47 and 49, relating to the closing of the ends of the tubing;

claim 4 relating to the severing of the two sections;

claims 6 and 7, relating to the use of the cushion;

claims 8 and 18, relating to the holding of the coil; and

claim 16, relating to the coil before use.

For these reasons, the partial search report has been drawn up for the invention first mentioned in the claims, i.e. for the claims relating to the closing of the ends of the tube portions.