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(54) **Raffia Sack**

(57) RAFFIA SACK, of the type used for storing preferably granulated and/or powdery substances, said sack (1) featuring a side bellows (3) and a weld (2) forming its tubular shape, said raffia sack being made with raffia which is externally coated with a polyolefin and incorpo-

rating a band (6) that seals the rim of the hem resulting from the folding (4) of the bottom of the sack on the body thereof, said band (6) being thermally welded to the body of said sack, thereby forming a bottom featuring an air-tight closure.

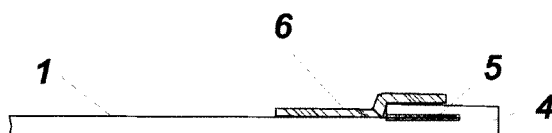


Fig. 2

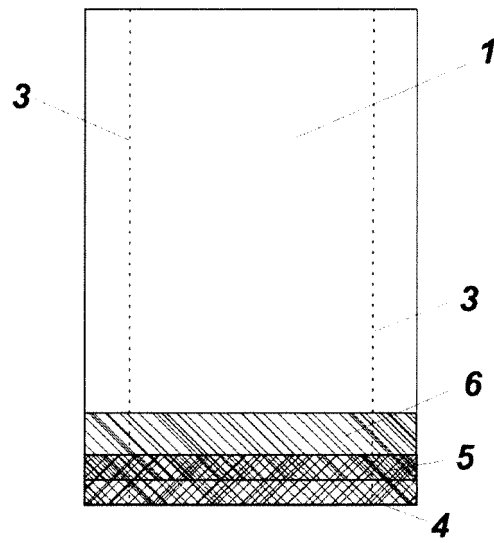


Fig. 3

Description**FIELD OF THE INVENTION**

[0001] The object of the present invention is a raffia sack of the type used for storing purposes and/or for transport of granulated or powdery materials, which features a novel manufacturing process that makes it more economical whilst maintaining or improving its qualities.

PRIOR ART

[0002] Sacks have been used since antiquity for the storage of substances, such as grain and powdery materials. The discovery of plastics meant their immediate incorporation as base material for forming sacks.

[0003] There exist different means for forming sacks made of plastic material, both for performing the required forming folds and for creating the means for joining the parts thereof: welding, gluing, stitching, etc.

[0004] Sacks intended to withstand large weights are made of raffia, which is a resistant and coarse fiber used in the ropemaking industry and in woven items. To the extent that raffia provides a resistant and long-lasting fabric that does not suffer deformation it is perfect for making sheets that will become the base for sacks meant to be resistant.

[0005] In general raffia is made of net-shaped braided polypropylene (PP). And the sacks made from a sheet of this material are stitched to form its joinings.

[0006] The main object of the present invention is the manufacture of a resistant and long-lasting raffia sack, through thermal welding, having low manufacturing costs.

[0007] These and other advantages of the present invention will become obvious throughout the description below.

BRIEF DESCRIPTION OF THE INVENTION

[0008] The present invention describes a raffia sack, of the type used to preferably store granulated and/or powdery materials in which the raffia sheet incorporates a polyolefin outer coating.

[0009] This new raffia sheet provided with an outer polyolefin coating is folded to form a tube having a side bellows.

[0010] The bottom is folded on itself and pre-welded with some temperature, there being added a raffia strip that secures both closing and welding through thermal welding.

[0011] Manufacture of the so obtained sack is simple inasmuch as the final product is achieved by means of simple handling mechanical operations that can be automated.

[0012] The sack is efficient and resistant because the thermal welding performed provides great airtightness. The sack is economical because in its manufacture costly

stitching operations are dispensed with, thereby it being obtained a final product featuring at least comparable consistency and resistance.

BRIEF EXPLANATION OF THE DRAWINGS

[0013] A sheet of drawings is provided purely by way of illustration, it not being meant to limit the invention but to enhance understanding of the same.

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Figure 1 shows a perspective view of a sheet that has been subjected to a tubing process, the sheet has also been provided with side bellows and its ends having been thermally welded.

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Figure 2 shows a section of a sack formed in accordance with the present invention.

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Figure 3 shows an top view of the sack of the preceding figure.

DETAILED EXPLANATION OF THE INVENTION

[0014] The present invention is a raffia sack of the type used to preferably store granulated and/or powdery substances, said sack (1) featuring a polyolefin outer coating.

[0015] This coating provides the sack with properties that are necessary to properly take part in the process of formation thereof under the present invention. The polyolefin layer applied on the outer surfaces of the raffia sack allows it to display a good behaviour during thermal welding, thereby facilitating the joining of its ends.

[0016] In addition, this outer polyolefin layer permits serigraphy and/or printing of legends and drawings with excellent finish quality.

[0017] As shown in figure 1, in order to make the sack of the invention, in its preferred embodiment, the base material is a raffia sheet provided with a polyolefin outer coating. This sheet is folded and joined together by the ends thereof by means of a weld (2) in a process known as tubing that results in a tube having a side bellows (3).

[0018] The main technical problem to be overcome by the invention is avoiding stitching or gluing to obtain the sack bottom. This is attained, as shown in figures 2 and 3, by means of the folding and welding described below.

[0019] The tube obtained from the aforesaid tubing, figure 1, is by means of a fold (4) turned on itself on its bottom and then thermal pre-welding (5) is performed. A band (6), also made of raffia, is then added at the joining area of the end of the hem obtained from said folding and the body of the sack and, subsequently, the bottom of the sack is thermally welded, as illustrated in said figures 2 and 3.

[0020] The dotted line in said figure 3 shows the side bellows of the sack, the folding (4) on the bottom of the sack, the pre-welding (5) thereof and the welded band (6).

[0021] The aforesaid welds and the band (6) configure the bottom of the sack and create an airtight closure of

same.

[0022] In this manner it is obtained with the present invention a sack whose simple manufacture avoids complicated and costly stitching operations, even gluing, by using thermal welding on the raffia material. The joinings forming the sack are very resistant and allow to store loads at least equivalent or even heavier than those to which conventional sacks are subjected.

[0023] It is understood that in the present case details of finish and form may be varied provided the essential nature of the invention is not modified.

Claims

1. RAFFIA SACK, of the type used for storing preferably granulated and/or powdery substances, said sack (1) featuring a side bellows (3) and a weld (2) forming its tubular shape, **CHARACTERIZED in that** it is made with raffia which is externally coated with a polyolefin, said raffia sack incorporating a band (6) that seals the rim of the hem resulting from the folding (4) of the bottom of the sack on the body thereof, said band (6) being thermally welded to the body of said sack.
2. RAFFIA SACK, according to claim 1, **CHARACTERIZED in that** both the body of the sack and the body of the hem resulting from the folding (4) against itself of the formative tube are thermally pre-welded (5).
3. RAFFIA SACK, according to the previous claims, **CHARACTERIZED in that** the bottom of the sack (1) obtained through thermal welding and said band (6) form an airtight closure.

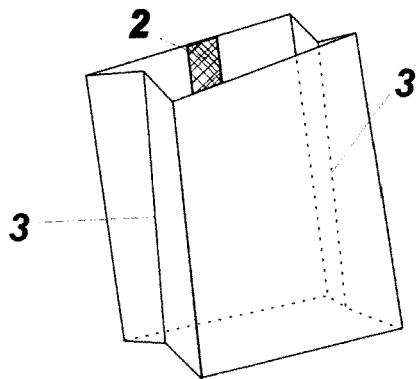


Fig. 1

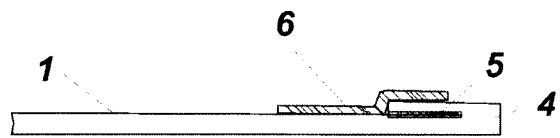


Fig. 2

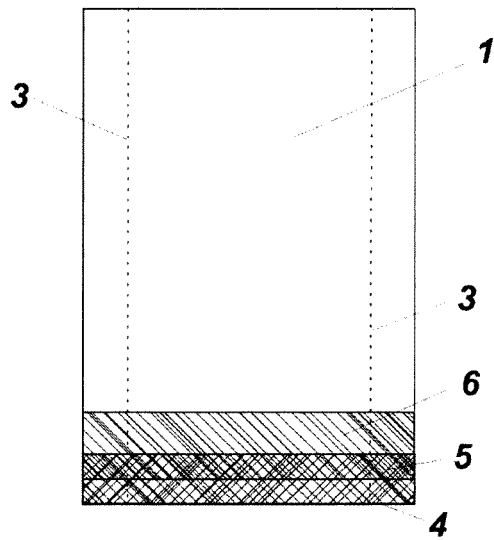


Fig. 3



EUROPEAN SEARCH REPORT

 Application Number
 EP 13 00 3175

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	WO 2006/125585 A1 (WINDMOELLER & HOELSCHER [DE]; KOEHN UWE [DE]) 30 November 2006 (2006-11-30) * the whole document *	1-3	INV. B65D33/02 B65D30/20
X	US 2007/292053 A1 (LIN PAUL [US] ET AL) 20 December 2007 (2007-12-20) * paragraphs [0004], [0034], [0054] - [0059]; figures 10-15 *	1,3	
A	US 2004/136622 A1 (SHIGETA YOSHIKI [JP] ET AL) 15 July 2004 (2004-07-15) * paragraphs [0046], [0047], [0070], [0084]; figures 4,5 *	1-3	
A	US 3 567 111 A (BAXTER ROBERT O ET AL) 2 March 1971 (1971-03-02) * column 2, line 66 - column 3, line 25 * * column 6, line 21 - column 7, line 22; figures 1-5 *	1-3	
A	WO 95/30598 A1 (STARLINGER & CO GMBH [AT]; STARLINGER HUEMER F X [AT]) 16 November 1995 (1995-11-16) * page 10, line 20 - page 11, line 3 * * page 12, line 15 - line 19; figures 1,9 *	1-3	TECHNICAL FIELDS SEARCHED (IPC) B65D
A	US 2005/084185 A1 (MOON BYUNG J [KR] MOON BYUNG JIN [KR]) 21 April 2005 (2005-04-21) * paragraph [0019] - paragraph [0026]; figure 3 *	1-3	
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 19 September 2013	Examiner Galli, Monia
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			

 2
 EPO FORM 1503 03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 13 00 3175

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

19-09-2013

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 2006125585 A1	30-11-2006	AT 507156 T	15-05-2011
		BR PI0610202 A2	01-06-2010
		CN 101180222 A	14-05-2008
		DE 202006021199 U1	08-08-2013
		DE 202006021200 U1	08-08-2013
		DE 202006021201 U1	08-08-2013
		EP 1899235 A1	19-03-2008
		US 2006269173 A1	30-11-2006
		US 2011013859 A1	20-01-2011
		WO 2006125585 A1	30-11-2006
US 2007292053 A1	20-12-2007	NONE	
US 2004136622 A1	15-07-2004	JP 2004189307 A	08-07-2004
		TW 1294395 B	11-03-2008
		US 2004136622 A1	15-07-2004
US 3567111 A	02-03-1971	JP S51918 B1	12-01-1976
		US 3567111 A	02-03-1971
WO 9530598 A1	16-11-1995	AT 400831 B	25-03-1996
		AU 679366 B2	26-06-1997
		AU 2297895 A	29-11-1995
		BG 61873 B1	31-08-1998
		BG 100944 A	31-07-1997
		BR 9507701 A	19-08-1997
		CA 2186898 A1	16-11-1995
		CN 1147233 A	09-04-1997
		CZ 9602938 A3	16-01-2002
		DE 59500921 D1	04-12-1997
		DK 758992 T3	20-07-1998
		EG 20659 A	31-10-1999
		EP 0758992 A1	26-02-1997
		ES 2109821 T3	16-01-1998
		FI 964360 A	29-10-1996
		GR 3025924 T3	30-04-1998
		HU 220364 B	28-12-2001
		IL 113521 A	10-03-1998
		JO 1844 B	05-07-1995
		JP 3290439 B2	10-06-2002
		JP H09512518 A	16-12-1997
		MA 25862 A1	01-10-2003
		NO 964629 A	19-12-1996
		OA 10729 A	09-12-2002
		PL 317042 A1	03-03-1997
		RO 117966 B1	29-11-2002

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 13 00 3175

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

19-09-2013

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
		RU 2109666 C1	27-04-1998
		SI 9520060 A	30-06-1997
		SK 140896 A3	06-08-1997
		US 5845995 A	08-12-1998
		WO 9530598 A1	16-11-1995
		ZA 9503595 A	03-01-1996

US 2005084185	A1	21-04-2005	NONE
