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(54) Moulded pulp packaging product and method of producing the same

(57) A paper pulp mold packing structure of frozen foods for Oven and method of producing the same, which is primary produced by adding thermal resistance additives containing anionic compounds with the amount equal to the natural fibers, cross-linking agents containing both nonionic compounds and cationic compounds, into pulp made from fibrous material of paper pulp, non-paper pulp and mixtures thereof, and are mixed with 10 times amount of water to form a moldable pulp. Then, the moldable pulp is applied to the paper pulp molding machine for molding, and a membrane is coated inside the molded foodstuffs packing. The membrane is a PET membrane with thickness of 25μm~80μm, and is adhered to the inner surface of the molded foodstuffs packing by thermosetting adhesives. Foodstuffs packing produced by the above mentioned method can be heated with food at 220°C in the oven about 20~30 minutes and be stored at -35°C.

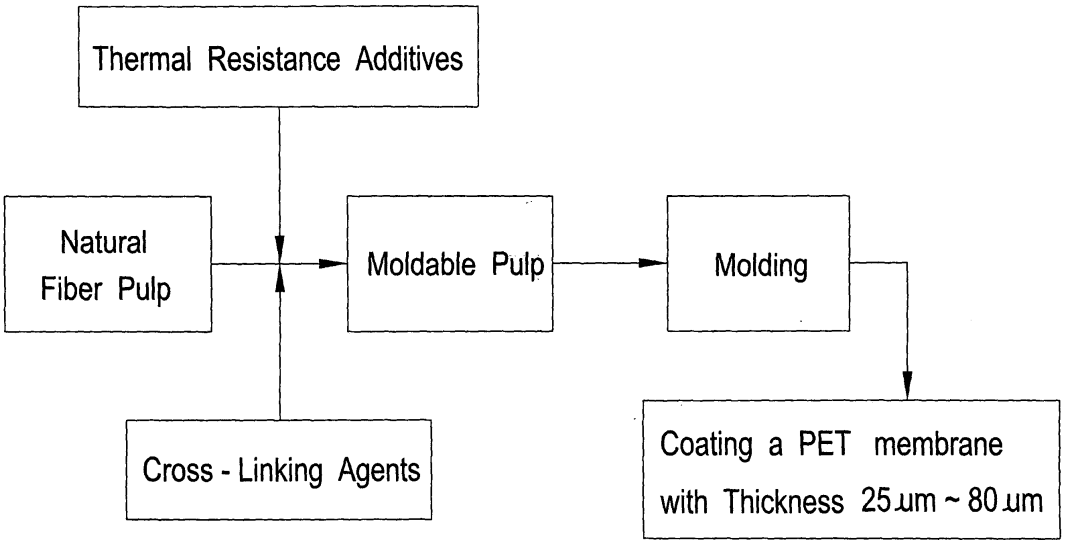

Fig . 1

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Description

FIELD OF THE INVENTION

[0001] The present invention relates to a paper pulp mold packing structure of frozen foods for Oven Using and method of producing the same, especially relates to a pulp molded packing for packing food, which is coated with a PET membrane with thickness of 25μm~80μm (Polyethylene Terephthalate) on the surface to be contact with food, and can be heated with food at 220°C in the oven about 20~30 minutes and be stored at -35°C.

BACKGROUND OF THE INVENTION

[0002] Generally, a well known pulp mold foodstuffs packing (such as industry or farming packing) is mainly made with sugar cane bagasse, phragmites communis, and recycled paper, then mixed with Hydro-Power pulper equipment and through the vacuum-forming method to coat on metal molding tool directly for modeling, after molding, using liquid acrylic, latex, resin or EVA added additives (such as PP - OPP - OPS - PE)...etc for surface treatment. The resins as above mentioned and general compound coatings are low heat endurance. While in the high temperature, surface of the resins and general compound coatings will dissolve easily, then the toxic chemicals mix into the packed and is serious harmful for human's health. Moreover, users usually misuse the product due to not knowing them, which may result in dangerous more serious than that of Styrofoam or plastic tableware.

[0003] Furthermore, when the paper pulp mold foodstuffs packing with structure as above mentioned is placed at subzero 30°C to rapidly cool down for keeping food, coating (membrane) of the paper pulp mold foodstuffs packing may crack and release toxic material, and the water or oil stored in it may permeate out so as to not meet practical utility.

[0004] The primary disadvantage of above mentioned structure is that the paper pulp mold foodstuffs packing and the membrane coated on the packing for waterproof and greaseproof all are low heat endurance and not suitable for storing food at ultracold temperature, especially in oven beyond 150°C, which limits the usage of these kind packing, decrease it's economical value and hinder the population of environmental paper pulp mold foodstuffs packing and tableware.

[0005] Because of the many limits of usage of the above mentioned paper pulp mold foodstuffs packing, which lacks utility and economy, the inventor of the present invention concentrate himself with many years experience to create a new paper pulp mold packing structure of frozen foods for Oven Using and method of producing the same.

[0006] The primary object of the present invention is to provide a paper pulp mold packing structure of frozen foods for Oven Using and method of producing the same, which adds thermal resistance additives with amount equal to natural fibers, wherein the thermal resistance additives contains anionic compounds. The surface of the paper pulp mold packing is adhered with a PET membrane by thermosetting adhesives not only for waterproof, greaseproof, but also for enduring high temp baking and rapidly cool down, which increase the value of industry using.

SUMMARY OF THE INVENTION

[0007] For the above objects, the method of present invention is to add thermal resistance additives containing anionic compounds with amount equal to natural fibers, cross-linking agents containing both nonionic compounds and cationic compounds, into the pulp made from fibrous material of paper pulp, non-paper pulp and mixtures thereof, and are mixed with 10 times amount of water to form a moldable pulp. Then, the moldable pulp is applied to the paper pulp molding machine for molding, and a membrane is coated inside the molded foodstuffs packing. The membrane is a PET (Polyethylene Terephthalate) membrane with thickness of 25μm~80μm, and is adhered to the inner surface of the molded foodstuffs packing by thermosetting adhesives.

[0008] Foodstuffs packing produced by the above mentioned method can be heated with food at 220°C in the oven about 20 ~ 30 minutes and be stored at -35°C so as to be a paper pulp mold packing of frozen foods for Oven.

DETAILED DESCRIPTION OF THE EMBODIMENT

[0009] The following provides an explanation of an embodiment of the paper pulp mold packing structure of frozen foods for Oven Using and method of producing the same of the present invention based on the drawings so as to make examiners more realize the technology, characters, structure and effective of the present invention.

[0010] First, as shown in Figure 1 and Figure 2, the paper pulp mold packing structure of frozen foods for Oven and method of producing the same of the present invention is primary produced by adding thermal resistance additives containing anionic compounds with amount equal to natural fibers, cross-linking agents containing both nonionic compounds and cationic compounds, into pulp made from fibrous material of paper pulp, non-paper pulp and mixtures thereof, and are mixed with 10 times amount of water to form a moldable pulp. Then, the moldable pulp is applied to the Paper pulp molding machine for molding, and a membrane 20 is coated inside the molded foodstuffs packing 10 (as shown in Figure 2). The membrane is a PET (Polyethylene Terephthalate) membrane with thickness of 25μm~80μm, and is adhered to the inner surface of the molded foodstuffs packing by thermosetting adhesives 30.

[0011] As above, the thermal resistance additives added in the natural fibers pulp is made with mixing Inorganic Aluminum Silicate with 50%~80% parts relative to the fibrous material and Natural wax emulsion with 1.5%~9% parts relative to the fibrous material.

[0012] As above, the cross-linking agents added in the natural fibers pulp is made with 0.75%~5.4% parts Fluorochemical serice, 0.9%~7.2% parts High polymer compound, 0.15%~0.54% parts Aliphatic polyamine and 0.75%~9% parts Alkyl acryl copolymers, relative to the amount of the fibrous material.

[0013] Foodstuffs packing produced by the above mentioned method can be heated with food at 220°C in the oven about 20 ~ 30 minutes and be stored at -35°C by adding thermal resistance additives containing anionic compounds with amount equal to natural fibers, and are mixed with 10 times amount of water to form a moldable pulp, and a PET membrane is adhered to the surface of the molded foodstuffs packing by thermosetting adhesives.

[0014] Although the above has provided an explanation of an embodiment of the paper pulp mold packing structure of frozen foods for Oven and method of producing the same of the present invention based on the drawings, specific constitutions are not limited to the present embodiments, but rather the design and so forth may be altered provided it is within a range that does not deviate from the gist of the present invention.

BRIEF DESCRIPTION OF THE DRAWINGS

[0015]

Figure 1 is a block flow chart showing the producing method of paper pulp mold packing of frozen foods for Oven of the present invention; and

Figure 2 is a three-dimensional cross-section view showing a packing produced by an embodiment of the present invention.

Claims

1. A method of producing paper pulp mold packing of frozen foods for Oven, which is primary produced by adding thermal resistance additives containing anionic compounds with the amount equal to the natural fibers, cross-linking agents containing both nonionic compounds and cationic compounds, into pulp made from fibrous material of paper pulp, non-paper pulp and mixtures thereof, and being mixed with 10 times amount of water to form a moldable pulp, and then, the moldable pulp being applied to the paper pulp molding machine for molding, and a PET membrane being coated on the inner surface of the molded foodstuffs packing with thickness of 25μm~80μm by thermosetting adhesives.

2. The method according to claim 1, wherein said thermal resistance additives added in said natural fibers pulp is made with mixing Inorganic Aluminum Silicate with 50%~80% parts relative to said fibrous material and Natural wax emulsion with 1.5%~9% parts relative to said fibrous material.

3. The method according to claim 1, wherein said cross-linking agents added in said natural fibers pulp is made with 0.75%~5.4% parts Fluorochemical serice, 0.9%~7.2% parts High polymer compound, 0.15%~0.54% parts Aliphatic polyamine and 0.75%~9% parts Alkyl acryl copolymers, relative to the amount of said fibrous material.

4. A paper pulp mold packing structure of frozen foods for Oven, comprising a paper pulp mold packing with a membrane coated on the inner surface of said packing, which is charactered that said membrane is a PET membrane with thickness of 25μm~80μm and being adhered to the surface of said packing by thermosetting adhesives.

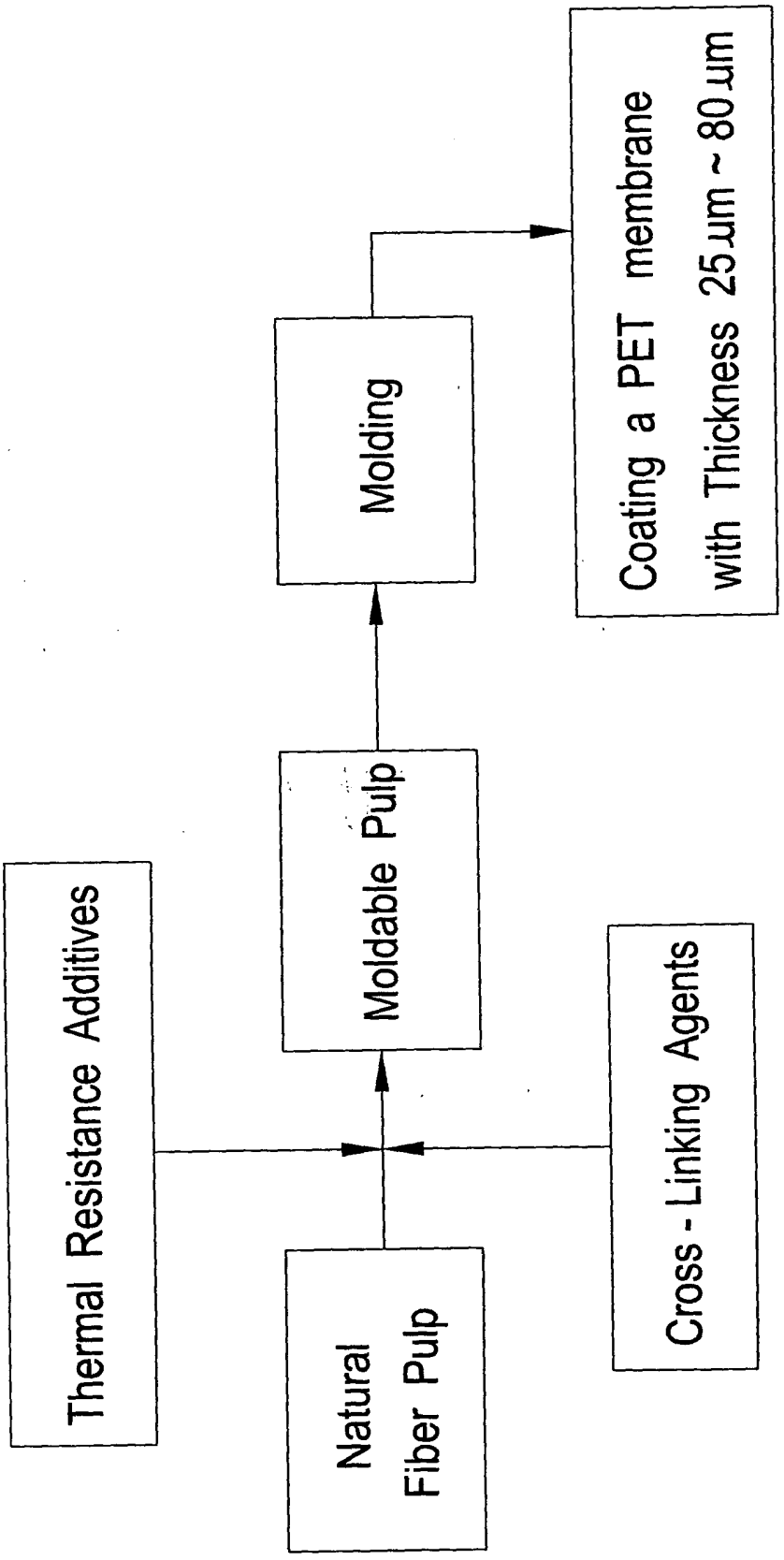
Thermal Resistance Additives
Natural Fiber Pulp
Moldable Pulp
Cross - Linking Agents
Molding
Coating a PET membrane with Thickness 25㎛ ~ 80㎛

Fig. 1

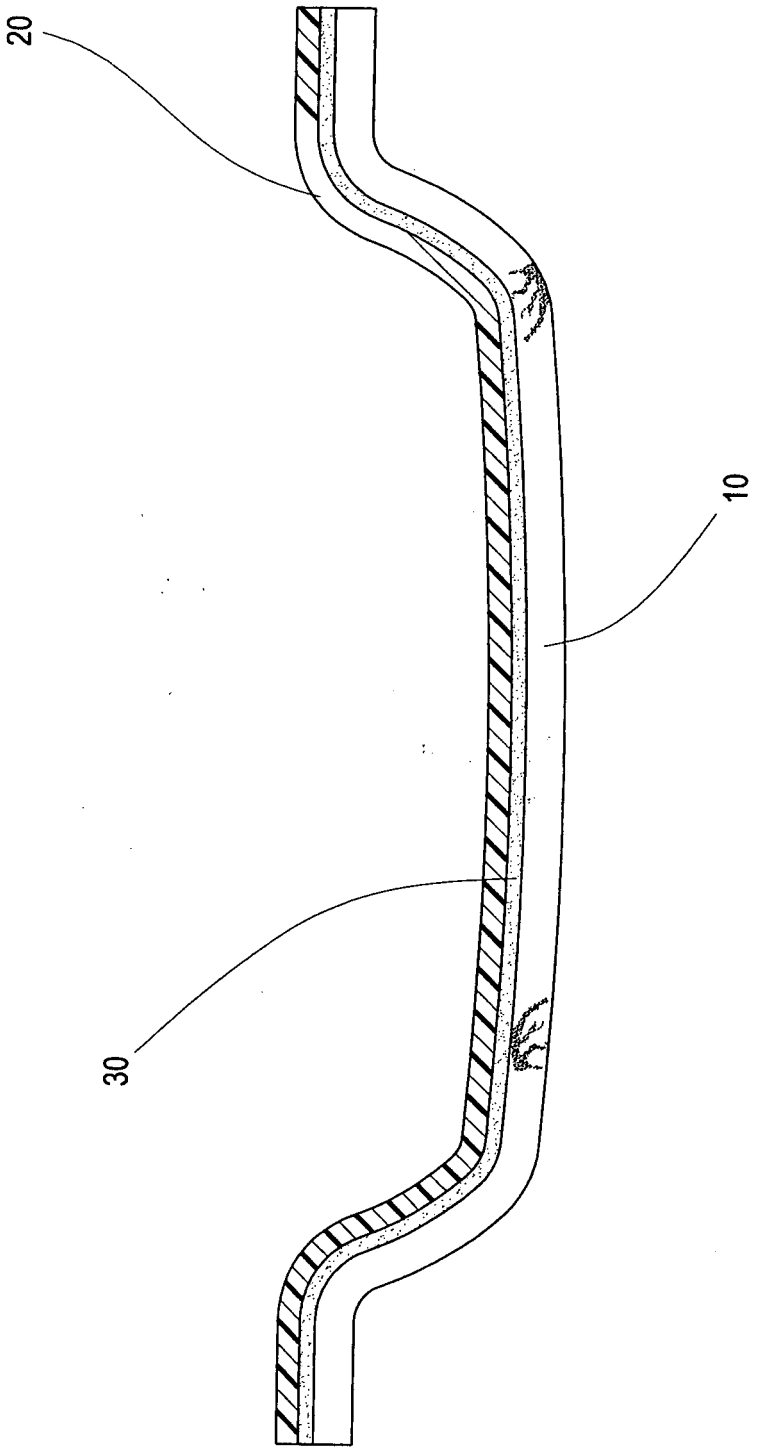

Fig . 2

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EUROPEAN SEARCH REPORT

Application Number
EP 04 02 1193

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.7)
A	US 2002/060004 A1 (KOIKE MOTOMU) 23 May 2002 (2002-05-23) * the whole document * -----	1,4	D21H27/10 B32B29/00
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TECHNICAL FIELDS SEARCHED (Int.Cl.7)

D21H
B32B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	5 July 2005	Songy, O

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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EPO FORM 1503 03.82 (P04C01)

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 04 02 1193

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
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05-07-2005

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