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(54) A method for producing paper pulp molded products of non-paper pulp natural fibers

(57) A method for producing non-paper pulp natural fibers into paper pulp molded products, which is primarily produced by the following steps in sequence: a. scouring, b. bleaching, c. washing, d. dehydrating, e. pulverize, f. pulping, g. moldable pulp, h. paper pulp molding, and i. releasing, so as to obtain the paper pulp molded finished

products made with non-paper pulp natural fibers. Accordingly, the present invention may use the traditional industrial waste such as palms, hemp and coconut shells as the major material for paper molded products to both decrease the cost of paper molded products and maintain the ecological environment of the earth.

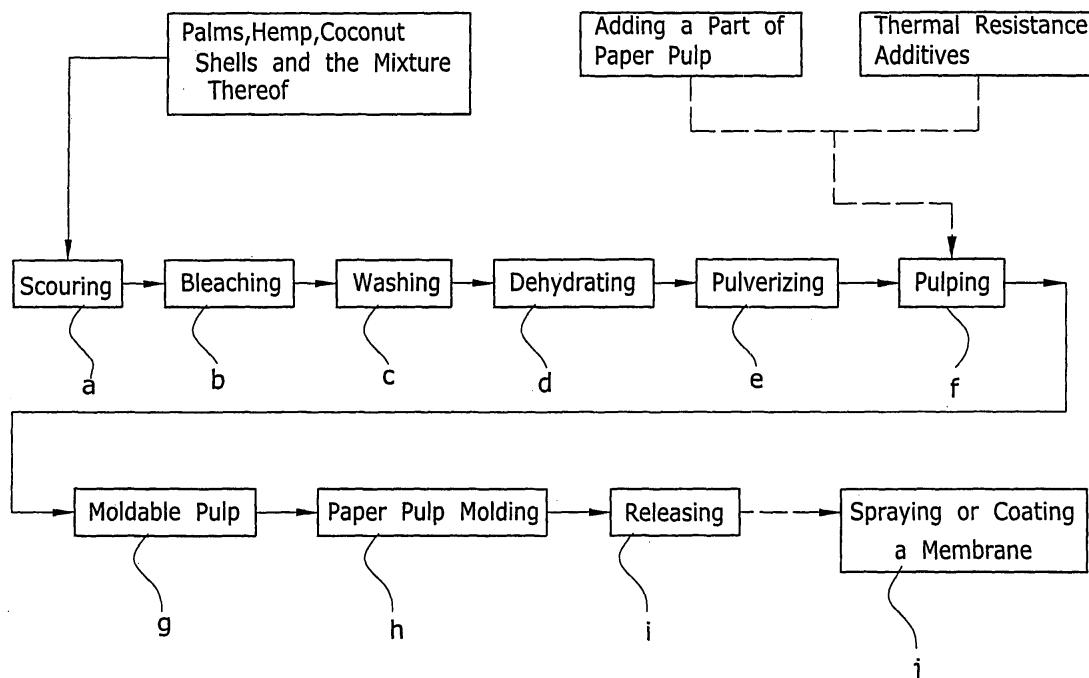


Fig.2

Description**FIELD OF THE INVENTION**

[0001] The present invention relates to a method for producing non-paper pulp natural fibers of paper pulp molded products, especially relates to a method that recycle and reuse the traditional industrial waste with coarser natural fibers such as palms, hemp and coconut shells to reproduce to a moldable pulp by steps such as scouring and bleaching, so as to produce a paper molded product. Therefore, the problem that paper pulp is hard to be obtained may be solved, and the cost of the paper molded product may be decreased.

BACKGROUND OF THE INVENTION

[0002] Generally, a well known paper molded packing product material, especially to a fibrous material used for a packing container with environmental protection effect or decomposable. As known that conventional paper production technology can not deal with harder fibers, therefore, the nonpoisonous plants such as wood pulp, sugar cane bagasse, phragmites communis, straw pulp, grain shells, starch and recycled paper are the major raw material, however, the amount of the above mentioned paper pulp raw material is limited, especially that trees are the primary raw material for producing paper pulp, and are the max number of usage, which seriously persecute the ecological environment of the earth. Therefore, some proprietors and nations who care the environmental protection have tried hard to find the replace product.

[0003] Because of the reason that when using paper pulp as the raw material for producing paper molded product, the amount of the material is small, the obtaining cost is high and is more dangerous to the ecological environment, the inventor of the present invention concentrate himself with many years experience to create a new method for producing non-paper pulp natural fibers of paper pulp molded products.

[0004] The primary object of the present invention is to provide a method for producing non-paper pulp natural fibers of paper pulp molded products, which recycle and reuse the traditional industrial waste which has never been used before, such as palms, hemp and coconut shells, to both solve the problem of waste in the processing products nations and areas that produce palms, hemp and coconut shells (trees), and decrease the logging of trees to protect the ecological environment of the earth.

[0005] The another object of the present invention is to provide a method for producing non-paper pulp natural fibers of paper pulp molded products, which produces the paper molded products by recycling and reusing the traditional industrial waste that has never been used before, such as palms, hemp and coconut shells, to decrease the cost.

SUMMARY OF THE INVENTION

[0006] To achieve the above object, the producing steps of the present invention comprising: a. scouring,

5 soaking and stirring the non-paper pulp natural fibers with water in a tank, wherein the ratio of the natural fibers to water is 1:10, adding 0.01%~5% parts NaOH, scouring agents, penetrating agents and bleaching stabilizers, relative to the natural fibers, and being well stirred; b. 10 bleaching, 1%~10% parts H₂O₂ relative to said natural fibers is added well stirring of step a for stirring to an appropriate degree, for bleaching and being heated to about 90°C with soaked time in 30~90 minutes; c. washing, obtaining said non-paper pulp natural fibers after finishing bleaching of step b, then be soaked into the cold water with 0.01%~5% Sodium Hydrosulfite about 30 minutes; d. dehydrating, taking out said non-paper pulp natural fibers after washing and swing or air-drying it; e. pulverizing, putting said non-paper pulp natural fibers into 20 the pulverizer after dehydrating; f. pulping, putting said non-paper pulp natural fibers into the mixing pulp tank with adding the water to become a well mixed natural fibers pulp after pulverizing, wherein the ratio of the natural fibers to water is 1:10; g. moldable pulp, mixing 25 cross-linking agents containing nonionic compounds and cationic compounds with said non-paper pulp natural fibers in a storage tank to become a moldable pulp after pulping, wherein said cross-linking agent is made with 0.75%~5.4% parts Fluorochemical serice, 0.9%~7.2% 30 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 natural fibers; h. paper pulp molding, spraying a releasing harmonizing agent membrane on the surface of a paper molding mold, 35 applying appropriate moldable pulp and then being heated to about 120°C , 10~20 minutes for drying thermosetting, wherein said releasing harmonizing agent is mixed from 9.5% parts releasing agent, 0.5% cross-linking agent and 90% dilute water; i. releasing, releasing products from mold by air-blowing to obtain paper pulp molded 40 products.

[0007] As the above producing method, in step f, wherein after pulverizing said non-paper pulp natural fibers, further adds a part of paper pulp, recycled paper, or

45 thermal resistance additives containing anionic compounds with equal amount of non-paper pulp natural fibers, and then, being stirred with water to form a uniform natural fibers pulp; said thermal resistance additives containing 50%~80% parts Inorganic Aluminum Silicate and 50 1.5%~9% parts Natural wax emulsion, relative to said natural fibers.

[0008] Also, after step I, a chemical polymer (such as PP, OPP, OPS, PE, PET, or environmental protection waterproof, watergrease water based paint) protection

55 membrane is coated on the inner or outer surface of the paper pulp molded products obtained from releasing by spraying, coating or pasting, to meet the requirement of containing foods for different usage.

[0009] Because the paper molded products produced by above method use the traditional industrial such as palms, hemp and coconut shells (trees) as the major raw material, the cost may be decreased, the problem of industrial waste may be solved, and the logging amount of trees may be decreased to protect the ecological environment.

DETAILED DESCRIPTION OF THE EMBODIMENT

[0010] The following provides an explanation of an embodiment of the method for producing non-paper pulp natural fibers of paper pulp molded production of the present invention based on the drawings so as to make examiners more realize the technology, characters, and effective of the present invention:

[0011] First, as shown in Figure 1, the method for producing non-paper pulp natural fibers of paper pulp molded production of the present invention comprises the steps of:

a. Scouring, soaking and stirring the non-paper pulp natural fibers with water in a tank, wherein the ratio of the natural fibers to water is 1:10, adding 0.01%~5% parts NaOH, 0.01%~5% parts scouring agents, 0.01%~5% penetrating agents and 0.01%~5% bleaching stabilizers, relative to said natural fibers, and well stirred to easier crack the harder fibers; said non-paper pulp natural fibers being selected from one of the group of palms, hemp, coconut shells and the mixture thereof;

b. Bleaching, 1%~10% parts H₂O₂ relative to said natural fibers is added after well stirring of step a for stirring to an appropriate degree, for bleaching and being heated to about 90°C with soaked time in 30~90 minutes, so as to lighter the color of the natural fibers;

c. Washing, obtaining said non-paper pulp natural fibers after finishing bleaching of step b, then be soaked into the cold water with 0.01%~5% Sodium Hydrosulfite about 30 minutes, so as to wash the bleaching agents and chemical material therein out and maintain the natural fibers in a controllable stable state;

d. Dehydrating, taking out said non-paper pulp natural fibers after washing and swing or air-drying it;

e. Pulverizing, putting said non-paper pulp natural fibers (still containing 50%~60% water) into the pulverizer after dehydrating, so as to make the natural fibers thinner and shorter;

f. Pulping, putting said non-paper pulp natural fibers into the mixing pulp tank with adding the water to become a well mixed natural fibers pulp after pulver-

izing, wherein the ratio of the natural fibers to water is 1:10;

5 g. Moldable pulp, mixing cross-linking agents containing nonionic compounds and cationic compounds with said non-paper pulp natural fibers in a storage tank to become a moldable pulp after pulping, wherein said cross-linking agent 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 natural fibers;

10 h. Paper pulp molding, spraying a releasing harmonizing agent membrane on the surface of a paper molding mold, applying appropriate moldable pulp and then being heated to about 120°C , 10~20 minutes for drying thermosetting, wherein said releasing harmonizing agent is mixed from 9.5% parts releasing agent, 0.5% cross-linking agent and 90% dilute water;

15 i. Releasing, releasing products from mold by air-blowing to obtain paper pulp molded products

[0012] As the above method for producing non-paper pulp natural fibers of paper pulp molded production of the present invention, which recycle and reuse the traditional industrial waste such as palms, hemp and coconut shells, after a series special steps such as scouring and bleaching, to both solve the problem of waste in the processing products nations and areas that produce palms, hemp and coconut shells (trees), and decrease 20 the logging amount of trees to protect the ecological environment; furthermore, the cost may be decreased efficiently and the competition ability may be increased by the method for producing non-paper pulp natural fibers of paper pulp molded production of the present invention.

[0013] As shown in Figure 2, a part of paper pulp or recycled paper is mixed with said pulverized non-paper pulp natural fibers to meet the requirement of the different production place, so as to increase the using range and economical benefit; or thermal resistance additives containing anionic compounds is added, the amount is equal to non-paper pulp natural fibers, and 10 times amount of water is added together, then, being stirred to form a natural fibers pulp which can be used at 200 °C to meet the requirement of oven or microwave; said thermal resistance additives containing 50%~80% parts Inorganic Aluminum Silicate and 1.5%~9% parts Natural wax emulsion, relative to said natural fibers.

[0014] As the above method, after the releasing of step i, a chemical polymer (such as PP, OPP, OPS, PE, PET, or environmental protection waterproof, watergrease water based paint) protection membrane may be also coated on the inner or outer surface of the paper pulp molded products obtained from releasing by spraying, coating or

pasting, to meet the requirement of containing foods for different usage

[0015] 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

[0016]

Figure 1 Is a block flow chart showing the method for producing non-paper pulp natural fibers of paper pulp molded product of the present invention; and

Figure 2 Is a block flow chart showing the method for producing non-paper pulp natural fibers of paper pulp molded product for another embodiment of the present invention.

Claims

1. A method for producing non-paper pulp natural fibers of paper pulp molded products, which is primarily produced by the following steps:

a. Scouring, soaking and stirring the non-paper pulp natural fibers with water in a tank, wherein the ratio of the natural fibers to water is 1:10, adding 0.01%~5% parts NaOH, 0.01%~5% parts scouring agents, 0.01%~5% penetrating agents and 0.01%~5% bleaching stabilizers, relative to said natural fibers, and well stirred; said non-paper pulp natural fibers being selected from one of the group of palms, hemp, coconut shells arid the mixture thereof;

b. Bleaching, 1%~10% parts H₂O₂ relative to said natural fibers is added after well stirring of step a for stirring to an appropriate degree, for bleaching and being heated to about 90°C with soaked time in 30~90 minutes;

c. Washing, obtaining said non-paper pulp natural fibers after finishing bleaching of step b, then be soaked into the cold water with 0.01%~5% Sodium Hydrosulfite about 30 minutes;

d. Dehydrating, taking out said non-paper pulp natural fibers after washing and swing or air-drying it;

e. Pulverizing, putting said non-paper pulp natural fibers into the pulverizer after dehydrating;

f. Pulping, putting said non-paper pulp natural fibers into the mixing pulp tank with adding the

water to become a well mixed natural fibers pulp after pulverizing, wherein the ratio of the natural fibers to water is 1:10;

g. Moldable pulp, mixing cross-linking agents containing nonionic compounds and cationic compounds with said non-paper pulp natural fibers in a storage tank to become a moldable pulp after pulping, wherein said cross-linking agent 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 natural fibers;

h. paper pulp molding, spraying a releasing harmonizing agent membrane on the surface of a paper molding mold, applying appropriate moldable pulp and then being heated to about 120°C , 10~20 minutes for drying thermosetting; and

i. Releasing, releasing products from mold by air-blowing to obtain paper pulp molded products.

2. The method according to claim 1, wherein said releasing harmonizing agent is mixed from 9.5% parts releasing agent, 0.5% cross-linking agent and 90% dilute water.

3. The method according to claim 1, in step f, wherein A part of paper pulp is mixed with said pulverized non-paper pulp natural fibers, and 10 times amount of water is added to stirring together to form a uniform natural fibers pulp.

4. The method according to claim 1, in step f, wherein after pulverizing said non-paper pulp natural fibers, 10 times amount of water is added and stirred to form a uniform natural fibers pulp, and thermal resistance additives containing anionic compounds is added and stirred to form a uniform thermal resistance natural fibers pulp, said thermal resistance additives containing 50%~80% parts Inorganic Aluminum Silicate and 1.5%~9% parts Natural wax emulsion, relative to said natural fibers.

5. The method according to claim 1,in step I, wherein after obtaining said paper pulp molded products, a step j for coating a membrane may be added to form a protecting membrane with chemical polymer on the surface of said paper pulp molded products.

6. The method according to claim 5, wherein said step j is to coat a layer of chemical polymer on the surface of said paper pulp molded products.

7. The method according to claim 5, wherein said step j is to paste a layer of chemical polymer on the surface of said paper pulp molded products.

8. The method according to claim 5, wherein said step j is to spread a layer of chemical polymer on the surface of said paper pulp molded products.

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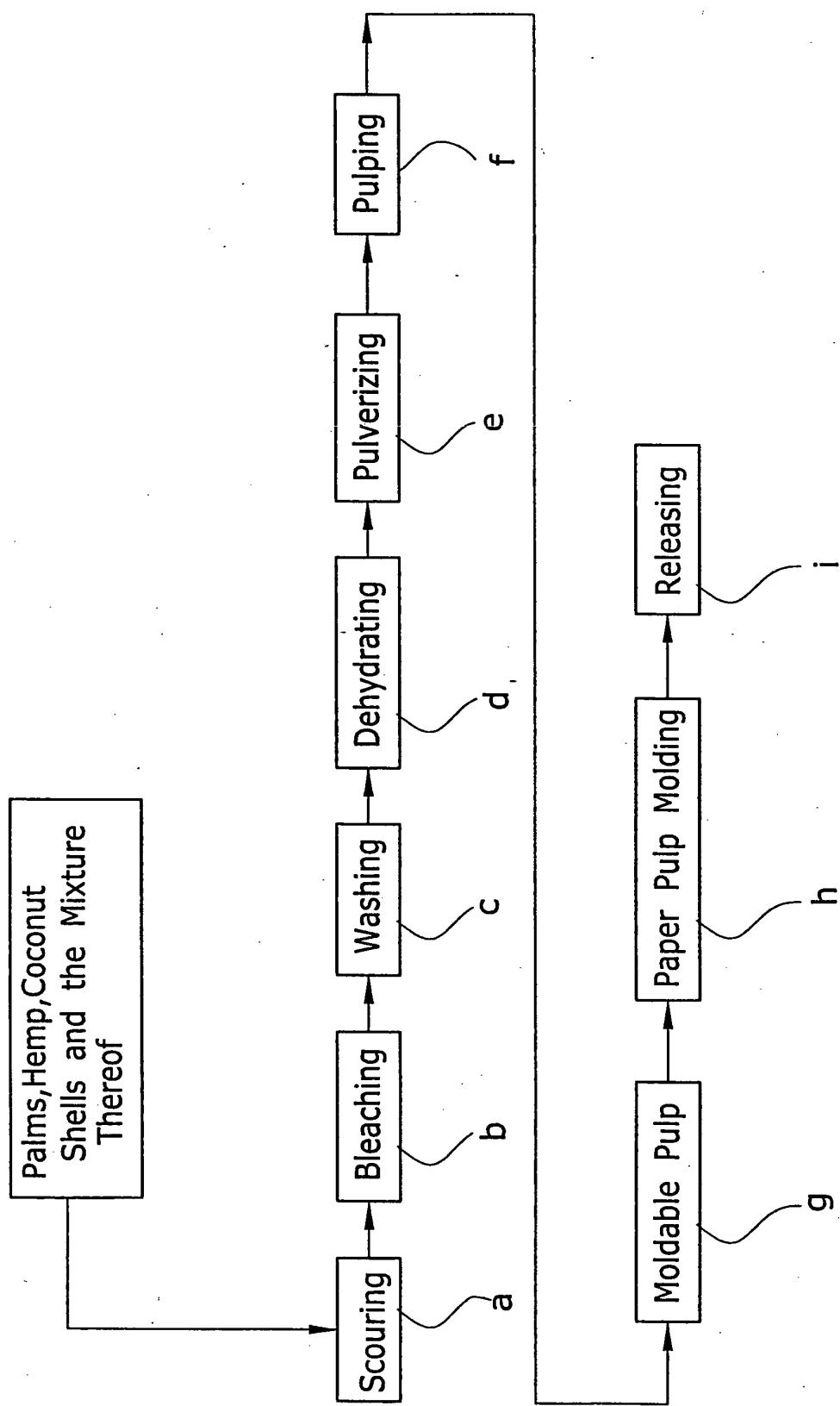


Fig. 1

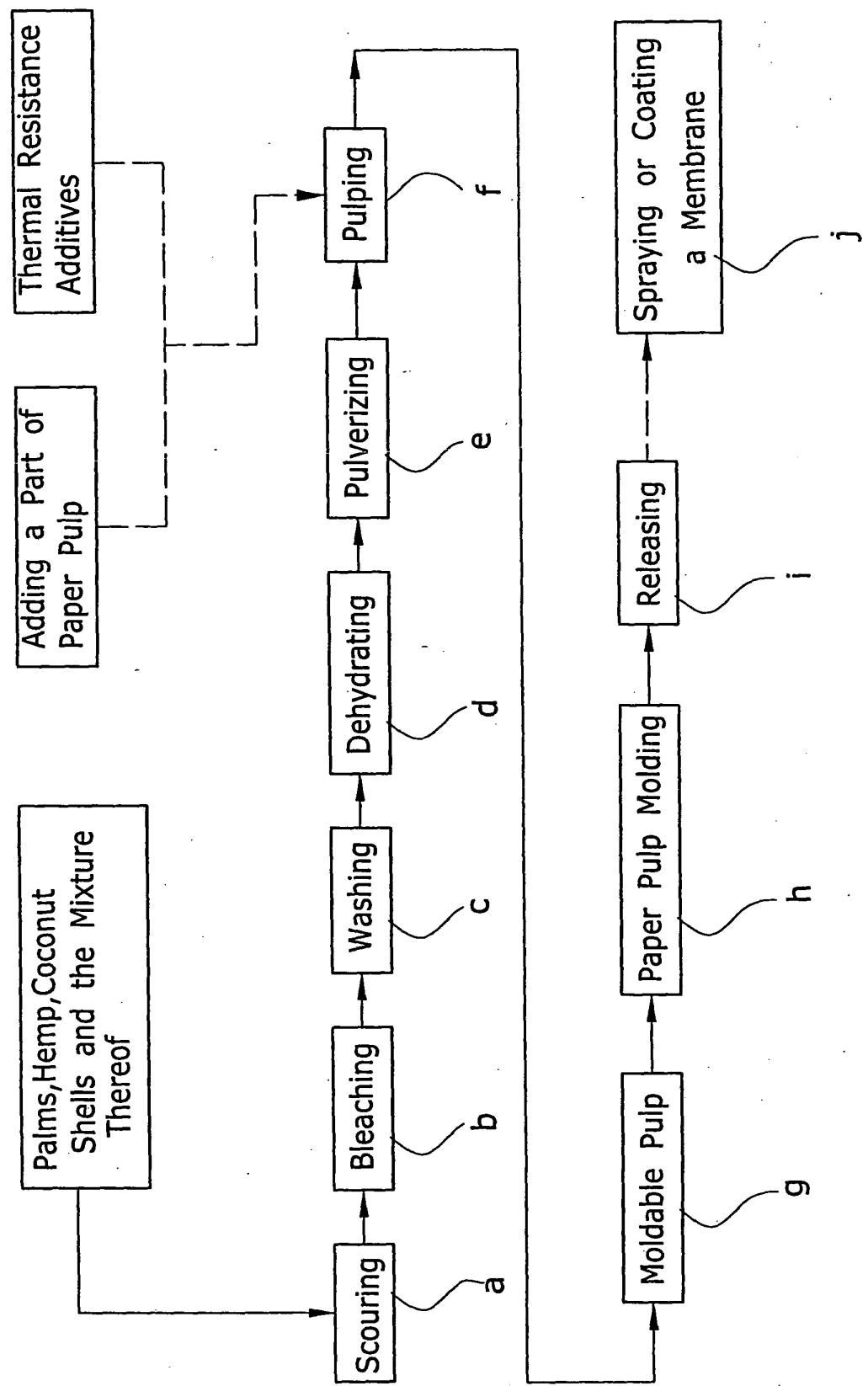


Fig.2



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