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(54) DRINK STICK PACKAGING PRODUCTION METHOD WITH INCREASED NUMBER OF HOLES

(57) A drink stick (10) intended to be used for hot/cold brewing of tea, coffee, herbal tea and fruit tea, wherein; it relates to a production method for manufacturing pack-

aging (20) with reduced hole (30) size and increased number of holes (30), in order to achieve brewing rate and brewing quality of the mentioned beverages.

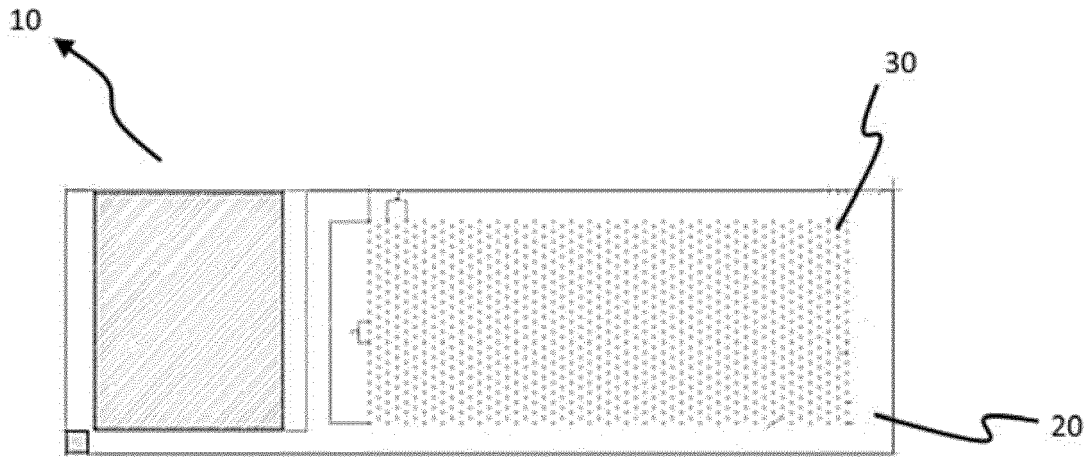


Figure 1

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Description**Technical Field**

[0001] The invention relates to an improvement regarding the packaging of drink sticks used for hot and cold beverages such as tea, coffee, herbal tea and fruit tea.

[0002] The invention relates to a method of production particularly for packaging of the mentioned tea sticks.

Prior Art

[0003] Today, number of holes on packages, which are used for hot and cold beverages, formed during manufacturing is approximately 427. These holes are lined up with certain intervals on the water infused part (contact) of the packaging, which has dimensions of 4 cm width x 15 cm height.

[0004] Holes are formed with heating method. Heat at 400 degrees is applied. This may lead to deformation of the structure of the packaging and health risks.

[0005] Furthermore, irregularities while forming the holes results in burrs on the backside of the packaging. In this case, it is a high possibility that these burrs may fall into the beverage of the consumer. In addition, because of opening needles hole may not be fully opened.

[0006] In the prior art, when the packaging comes into contact with water, products may stick together due to insufficient number of holes and this may prevent brewing.

[0007] As a result, aforementioned disadvantages and lack of an adequate solutions in the background art have made it necessary to make an improvement in the relevant technical field.

Object of the Invention

[0008] The invention aims to provide a structure with different technical features which bring a new aspect in this field, compared to the embodiments of the prior art.

[0009] The primary purpose of the invention is to provide a product without health risks, by means of a novel package production.

[0010] An object of the invention is to provide a technique and machinery used for opening holes on the packaging in order to form 3 layers of packaging holes which are symmetric with respect to each other without causing burring on the backside.

[0011] All of the needles used for opening the holes are gold coated. Gold coating is important for providing hygiene and longer lifetime.

[0012] Another object of the invention is to provide a sanitary use and prevent wastage through increased number of holes. Increasing the number of holes from 427 to 1087 and reducing their size from 0.08 mm to 0.06 mm prevents wastage of expensive raw materials, allows releasing the herbal essences and provides much more

effective brewing (flavor, smell, color).

[0013] Another object of the invention is to prevent undesired stalks and dust which escape from the packaging.

5 [0014] Another object of the invention is to ensure effective brewing and thereby, to reduce raw material use, by increasing the number of holes on the product. Thereby, a higher quality product is achieved with less amount of raw material.

10 [0015] In the prior system, the products adhere together when the packaging comes into contact with water and brewing is hindered, on the other hand, with the new systems, while the products are prevented to adhere. It has been shown by the conducted tests that the increased number of holes ensure the entire product to come into contact with water. A full effectivity is ensured thereby.

15 [0016] Structural and characteristic features and all advantages of the invention shall become apparent with the detailed description given below and the appended drawing, therefore, assessment should be based on these drawings and the detailed description.

Brief Description of Drawings

25 [0017]

Figure 1 Shows the view of the packaging with reduced holes and increased number of holes, while it is opened.

30 **Figure 2** Gives the schematic view of the production method of the drink stick packaging.

[0018] Drawings must be scaled and details that are not crucial in understanding the invention may have been omitted. Furthermore, substantially identical elements or elements with substantially identical function are denote with same numbers.

Parts References

40 [0019]

10. Drink stick

20. Packaging

45 30. Hole

Description of References of Method Steps

50 [0020]

100. Opening holes (30) on the packaging (20) using an opening machine,

101. Cleaning the burrs on the backside of the packaging (20) with vacuuming after opening the holes (30),

55 102. Cleaning the remnants on the on the packaging (20) with polishing cleaning method after the vacuuming,

103. Cleaning the packaging (20) from remnants using air conditioning inside a chamber which is sterilized at appropriate humidity and temperature levels and unwrapping them,

104. After the air conditioning, wrapping the packaging (20) over a roll and once again applying air conditioning and ultraviolet rays before stretching,

105. Attaching the stretched rolls of packaging (20) to filling machine and reapplying air conditioning and ultraviolet rays after filling with desired products,

106. Applying the outer packaging of the product after filling and preparing for delivery packaging.

Detailed Description of the Invention

[0021] The preferred embodiments given herein detailed description are merely examples to help understanding the subject and not cause any limitation for the invention.

[0022] Products form are not putted inside the drink stick (10) packaging (20) subject of the invention, in powder. The product is visible to the eye when observed. The mixture is directly placed inside the packaging (20), without being applied any process.

[0023] The said packaging (20) comprises 3 layers. Outer and inner parts comprise OPP material. OPP is a material with a wide area of use especially in textile, food, floristry packaging and stationary industries, which is also used as a lamination layer due to its resilience and low temperatures welding feature. OPP is a soft and flexible material. It is more suitable for adhesion and bending. It is a kind of material which is usable in every field. It shows a strong compatibility with ultraviolet printing, with high clearness and adhesive levels.

[0024] This packaging (20) comprising 3 layers is tested for 10 days at 100 degree temperature and then reported. After receiving the conformity report, the process proceeds to the next step of opening holes (30).

[0025] The packaging (20) is placed onto the custom design hole (30) opening machine. Machine applies 12000 strikes per minute with the needles on it. It comprises approximately 1200 brewing holes (30). It may apply approximately 12000 strikes at once due to comprising 10 lines. Strikes may be applied not only in circular but also in any desired geometric pattern.

[0026] After performing the hole (30) opening process in the molding machine, vacuuming is applied to the inner foil of the packaging (20). Stretched foil is attached to the machine after vacuuming. Air conditioning and ultraviolet rays are applied for approximately 10 minutes. After filling the inner foil at the filling machine, it is coated by an outer packaging system. They are placed inside boxes of 30 and 16 item capacities with automatic filling, and finally cellophane is applied to the boxes, thereby, the products reach their final state without human intervention during filling, using fully automated machinery until boxing.

[0027] The Production of the packaging (20) of drink stick (10) of the invention with increased number of holes

(30) comprise the following process steps;

- Opening holes (30) on the packaging (20) using a hole (30) opening machine (100), (by reducing their size from 0.08 mm to 0.06 mm, the number of holes (30) are increased from 427 to 1200.)

- Cleaning the burring, which result from opening the holes (30), on the backside of the packaging (20), by vacuuming (101),

- Cleaning the remnants on the packaging (20) after vacuuming, using polishing cleaning (102),

- Cleaning the packaging (20) from remnants using air conditioning inside a chamber which is sterilized at an appropriate humidity and temperature levels and unwrapping them (103), (Air conditioning is applied during transporting on vertical and downwards conveyor bands of 6-10 m long.)

- After the air conditioning, wrapping the packaging (20) over a roll and once again applying air conditioning and ultraviolet rays before stretching (104), (By deburring with applying air conditioning process twice, the packaging (20) becomes safe for marketing in terms of health and quality condition according to European standards.)

- Attaching the stretched rolls of packaging (20) to filling machine and reapplying air conditioning and ultraviolet rays after filling with desired products (105),

- Applying the outer packaging of the product after filling and preparing for delivery packaging (106).

Claims

1. A production method for packaging (20) of drink sticks (10) with reduced hole (30) size and increased number of holes (30), intended to be used for hot/cold brewing of tea, coffee, herbal tea and fruit tea, where-in it comprises the following process steps;

- Opening holes (30) on the packaging (20) using a hole (30) opening machine (100),

- Cleaning the burring, which result from opening the holes (30), on the backside of the packaging (20), by vacuuming (101),

- Cleaning the remnants on the packaging (20) after vacuuming, using polishing cleaning (102),

- Cleaning the packaging (20) from remnants using air conditioning inside a chamber which is sterilized at an appropriate humidity and temperature levels and unwrapping them (103),

- After the air conditioning, wrapping the packaging (20) over a roll and once again applying

air conditioning and ultraviolet rays before stretching (104),

- Attaching the stretched rolls of packaging (20) to filling machine and reapplying air conditioning and ultraviolet rays after filling with desired products (105),

- Applying the outer packaging of the product after filling and preparing for delivery packaging (106).

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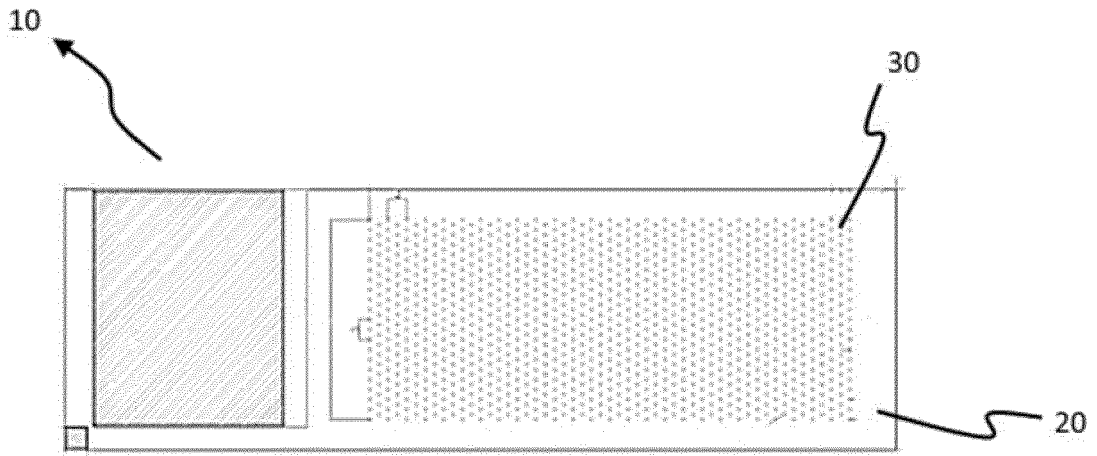


Figure 1

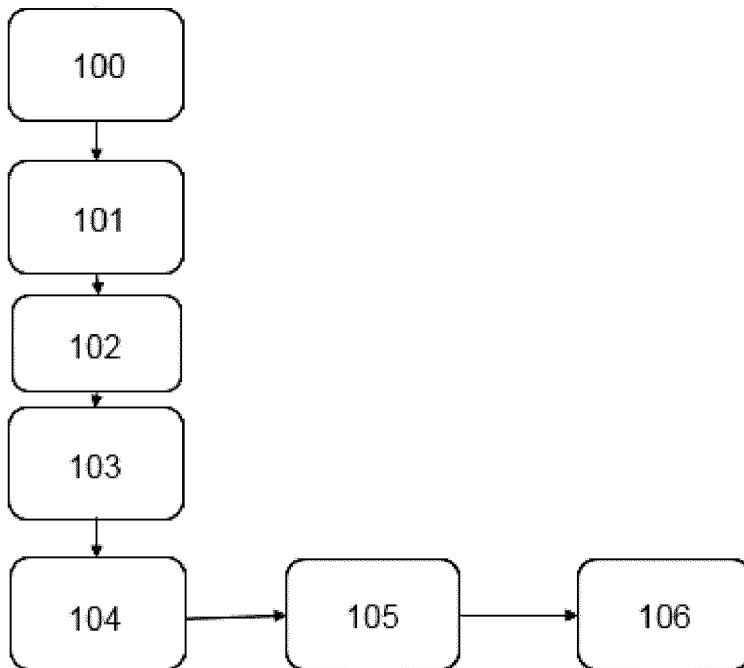


Figure 2



EUROPEAN SEARCH REPORT

Application Number
EP 18 15 4201

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
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			TECHNICAL FIELDS SEARCHED (IPC)
			B65B
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 25 April 2018	Examiner Yazici, Baris
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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**ANNEX TO THE EUROPEAN SEARCH REPORT
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5 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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25-04-2018

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