competitiveness are all reduced, and besides, the qualities of products are not uniform.

【Disclosure】

【Technical Problem】

Accordingly, the present disclosure has been made in view of the above-mentioned problems occurring in the prior art, and seeks to provide a food processing apparatus and a food manufacturing method using the same that is capable of supplying two different kinds of food materials, for example, a grain sheet (hereinafter, referred to as a first material) and Gim, dried seaweed (hereinafter, referred to as a second material) laid on top of the first material and sequentially performing manufacturing processes such as bonding and cutting on the single apparatus, thus allowing food to be easily processed.

【Technical Solution】

According to a first aspect of the present invention, there is provided a food processing apparatus including: a conveying part for receiving power to convey a material in one direction; a first material supply part located at the start of the conveying part to draw and load first materials laminated in a first container to the conveying part; a bonding liquid application part spaced apart from the first material supply part in an advancing direction of the conveying part to apply a bonding liquid to the top surfaces of the first materials conveyed from the first material supply part; a second material supply part adapted to draw and attach second materials laminated in a second container to the top surfaces of the first materials to which the bonding liquid is applied to form bonded materials; a bonding part adapted to pressurize the top surfaces of the bonded materials to

uniformly bond the first materials and the second materials; an oil application part having an oil application member adapted to apply oil to the top surfaces of the bonded materials; and a cutting part adapted to cut each bonded material to a plurality of pieces through the pressurization of a cutting press having a plurality of cutting knives.

According to embodiments of the present invention, preferably, the conveying part includes: a plurality of conveyors spaced apart from each other; and a raker unit located under the plurality of conveyors to convey the material by a given distance in the advancing direction of the conveying part, the raker unit comprising: a conveying plate having a plurality of protrusions protrudingly spaced apart from each other from the top surface thereof to convey the material; elevating actuators adapted to operate the conveying plate up and down; and a horizontal moving module adapted to slidingly reciprocate the conveying plate elevated by means of the elevating actuators in the advancing direction of the conveying part.

According to embodiments of the present invention, preferably, the first material supply part includes: the first container having an internal space for laminating the first materials; and a first adsorption member adapted to adsorb and draw the first materials from the first container through vacuum and to load the drawn first materials to the conveying part.

According to embodiments of the present invention, preferably, the bonding liquid application part includes: support rods located in a perpendicular direction to the conveying direction of the conveying part; and a plurality of injection nozzles spaced apart from each other on the support rods to inject the bonding liquid into the first materials.

According to embodiments of the present invention, preferably, the second material supply part includes: the second container spaced apart from top of the conveying part and having an internal space for laminating the second materials; a second adsorption member adapted to adsorb and draw the second materials from the second container through vacuum and to supply the drawn second materials to the top surfaces of the first materials; and a rotary actuator adapted to rotate the second adsorption member up and down to attach the second materials to the top surfaces of the first materials arranged on the conveying part.

According to embodiments of the present invention, preferably, the second adsorption member has an arch-shaped adsorption surface coming into contact with the second materials.

According to embodiments of the present invention, preferably, the bonding part includes a pressurizing member adapted to pressurize the top surfaces of the bonded materials, and the pressurizing member is a press operating up and down by means of an actuator or a pressurizing roller.

According to embodiments of the present invention, preferably, the oil application part includes: an oil container for containing oil thereinto; a rotating roller rotatably located in the oil container in such a manner as to allow at least a portion thereof to be submerged into the oil contained in the oil container; the roller type of oil application member selectively coming into rolling contact with the rotating roller to transfer the oil applied to the outer peripheral surface of the rotating roller thereto; and a conveying module adapted to move the oil application member to allow the oil application member to which the oil is transferred to be located on the top surfaces of the bonded materials.

According to embodiments of the present invention, preferably, the cutting knives of the cutting part are assembled to a form of a lattice and take a given shape so that the four corners of the cut pieces of each bonded material are rounded.

According to embodiments of the present invention, preferably, the bonded materials cut through the cutting part are conveyed and discharged through an adsorption module adapted to adsorb and convey the bonded materials through vacuum.

According to embodiments of the present invention, preferably, the food processing apparatus further includes a steam injection part adapted to inject steam into the bonded materials before the bonded materials are cut to increase the humidity of the bonded materials.

According to embodiments of the present invention, preferably, the first materials are grain sheets and the second materials are dried seaweed.

According to a second aspect of the present invention, there is provided a food manufacturing method including the steps of: receiving at least one first material from a first material supply part and conveying the first material to a conveying part; applying a bonding liquid to the first material disposed on the conveying part by means of injection nozzles; receiving a second material having the same area as the first material from a second material supply part and placing the second material on the top surface of the first material; pressurizing the top surface of the second material to bond the first material and the second material uniformly to form a bonded material; applying oil to at least one surface of the bonded material by means of an oil application member; and cutting the bonded material to which the oil is applied to a plurality of pieces through a cutting press having a

plurality of cutting knives or cutting the bonded material to a plurality of segmented pieces connected to each other by means of connection portions.

According to embodiments of the present invention, preferably, before the cutting, steam is injected into the bonded material to increase the humidity of the bonded material, and after the cutting, the plurality of cut pieces or segmented pieces is subjected to baking and seasoning processes in any order.

According to embodiments of the present invention, preferably, the first materials are grain sheets and the second materials are dried seaweed.

【Advantageous Effects】

According to embodiments of the present invention, the food processing apparatus and the food manufacturing method using the same maybe capable of supplying two different kinds of food materials and sequentially performing manufacturing processes such as bonding between the two different kinds of food materials and cutting the bonded material to a given size on the single apparatus, so that the food can be easily processed within a short period of time, thus improving the production efficiency of the apparatus.

【Description of Drawings】

FIG.1 is a side view showing a configuration of a food processing apparatus according to the present invention.

FIG.2 is a plan view of the food processing apparatus of FIG.1.

FIGS.3a to 3c are side and perspective views showing a raker unit of a conveying part of the food processing apparatus according to the present invention and the operating state of the raker unit.

【CLAIMS】

【Claim 1】

A food processing apparatus comprising:

a conveying part for receiving power to convey a material in one direction;

a first material supply part located at the start of the conveying part to draw and load first materials laminated in a first container to the conveying part;

a bonding liquid application part spaced apart from the first material supply part in an advancing direction of the conveying part to apply a bonding liquid to the top surfaces of the first materials conveyed from the first material supply part;

a second material supply part adapted to draw and attach second materials laminated in a second container to the top surfaces of the first materials to which the bonding liquid is applied to form bonded materials;

a bonding part adapted to pressurize the top surfaces of the bonded materials to uniformly bond the first materials and the second materials;

an oil application part having an oil application member adapted to apply oil to the top surfaces of the bonded materials; and

a cutting part adapted to cut each bonded material to a plurality of pieces through the pressurization of a cutting press having a plurality of cutting knives.

【Claim 2】

The food processing apparatus according to claim 1, wherein the conveying part comprises:

a plurality of conveyors spaced apart from each other; and

a raker unit located under the plurality of conveyors to convey the material by a given distance in the advancing direction of the conveying part,

the raker unit comprising:

a conveying plate having a plurality of protrusions protrudingly spaced apart from each other from the top surface thereof to convey the material;

elevating actuators adapted to operate the conveying plate up and down; and

a horizontal moving module adapted to slidingly reciprocate the conveying plate elevated by means of the elevating actuators in the advancing direction of the conveying part.

【Claim 3】

The food processing apparatus according to claim 1, wherein the first material supply part comprises:

the first container having an internal space for laminating the first materials; and

a first adsorption member adapted to adsorb and draw the first materials from the first container through vacuum and to load the drawn first materials to the conveying part.

【Claim 4】

The food processing apparatus according to claim 1, wherein the bonding liquid application part comprises:

support rods located in a perpendicular direction to the conveying direction of the conveying part; and

a plurality of injection nozzles spaced apart from each other on the support rods to inject the bonding liquid into the first materials.

【Claim 5】

The food processing apparatus according to claim 1, wherein the second material supply part comprises:

the second container spaced apart from top of the conveying part and having an internal space for laminating the second materials;

a second adsorption member adapted to adsorb and draw the second materials from the second container through vacuum and to supply the drawn second materials to the top surfaces of the first materials; and

a rotary actuator adapted to rotate the second adsorption member up and down to attach the second materials to the top surfaces of the first materials arranged on the conveying part.

【Claim 6】

The food processing apparatus according to claim 5, wherein the second adsorption member has an arch-shaped adsorption surface coming into contact with the second materials.

【Claim 7】

The food processing apparatus according to claim 1, wherein the bonding part comprises a pressurizing member adapted to pressurize the top surfaces of the bonded materials, and the pressurizing member is a press operating up and down by means of an actuator or a pressurizing roller.

【Claim 8】

The food processing apparatus according to claim 1, wherein the oil application part comprises:

an oil container for containing oil thereinto;

a rotating roller rotatably located in the oil container in such a manner as to allow at least a portion

thereof to be submerged into the oil contained in the oil container;

the roller type of oil application member selectively coming into rolling contact with the rotating roller to transfer the oil applied to the outer peripheral surface of the rotating roller thereto; and

a conveying module adapted to move the oil application member to allow the oil application member to which the oil is transferred to be located on the top surfaces of the bonded materials.

【Claim 9】

The food processing apparatus according to claim 1, wherein the cutting knives of the cutting part are assembled to a form of a lattice and take a given shape so that the four corners of the cut pieces of each bonded material are rounded.

【Claim 10】

The food processing apparatus according to claim 1, wherein the bonded materials cut through the cutting part are conveyed and discharged through an adsorption module adapted to adsorb and convey the bonded materials through vacuum.

【Claim 11】

The food processing apparatus according to claim 1, further comprising a steam injection part adapted to inject steam into the bonded materials before the bonded materials are cut to increase the humidity of the bonded materials.

【Claim 12】

The food processing apparatus according to any one of claims 1 to 11, wherein the first materials are grain sheets and the second materials are dried seaweed.

【Claim 13】

A food manufacturing method comprising the steps of:

receiving at least one first material from a first material supply part and conveying the first material to a conveying part;

applying a bonding liquid to the first material disposed on the conveying part by means of injection nozzles;

receiving a second material having the same area as the first material from a second material supply part and placing the second material on the top surface of the first material;

pressurizing the top surface of the second material to bond the first material and the second material uniformly to form a bonded material;

applying oil to at least one surface of the bonded material by means of an oil application member; and

cutting the bonded material to which the oil is applied to a plurality of pieces through a cutting press having a plurality of cutting knives or cutting the bonded material to a plurality of segmented pieces connected to each other by means of connection portions.

【Claim 14】

The food manufacturing method according to claim 13, wherein before the cutting, steam is injected into the bonded material to increase the humidity of the bonded material, and after the cutting, the plurality of cut pieces or segmented pieces is subjected to baking and seasoning processes in any order.

【Claim 15】

The food manufacturing method according to claim 13, wherein the first materials are grain sheets and the second materials are dried seaweed.