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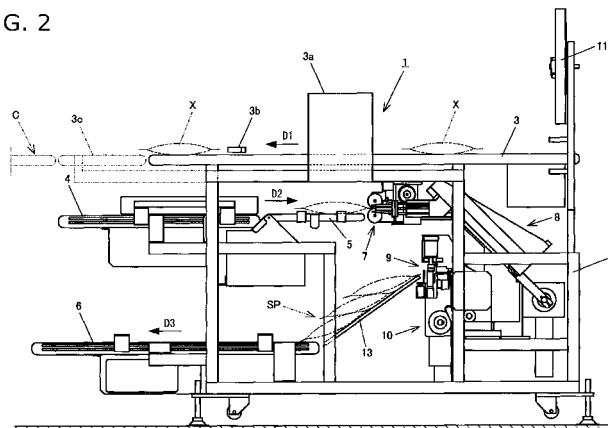
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(54) **STRIP PACK EQUIPMENT**

(57) A strip-pack apparatus (1) is equipped with conveyors (3, 3c, 4), an affixing unit (9), an operating mode selection switch (30) and a control unit (20), is positioned between a bag making and packaging machine (P) and a cartoning machine (C), and manufactures a strip pack (SP). The conveyors (3, 3c, 4) selectively move products (X) that have been supplied from the bag making and packaging machine (P) to an affixing position or the cartoning machine (C). The affixing unit (9) affixes the prod-

ucts (X) to a tape (T) in the affixing position. The operating mode selection switch (30) receives a selection between a strip pack manufacturing mode and a product passing mode. The product passing mode is a mode that causes the conveyors (3, 3c, 4) to move the products (X) to the cartoning machine (C) without moving the products (X) to the affixing position. The control unit (20) controls the driving of the conveyors (3, 3c, 4) and the affixing unit (9) depending on the mode that has been selected.

FIG. 2



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Description**TECHNICAL FIELD**

[0001] The present invention relates to a strip-pack apparatus that manufactures a strip pack where plural products are affixed to a strip and displayed in a hanging state, and the present invention belongs to the technical field of strip packs.

BACKGROUND ART

[0002] Conventionally, displays called strip packs have been known where plural products having contents such as a snack food enclosed in packaging bags are affixed to and hung from a strip. These strip packs have the advantage that they can economize display space and diversify design and they heighten a customer's desire to buy. Additionally, as strip-pack apparatus that manufactures such strip packs, there are the strip-pack apparatus disclosed in patent document 1 and patent document 2, for example.

Patent Document 1: JP-A No. 2004-182302

Patent Document 2: U.S. Patent No. 3,864,895

DISCLOSURE OF THE INVENTION

<Technical Problem>

[0003] The strip-pack apparatus is disposed directly under or in the vicinity of a transverse sealing apparatus in a bag making and packaging machine and has a configuration that moves products that have been supplied from the bag making and packaging machine to an affixing position where the products are affixed to the strip. For that reason, when the products that have been supplied are to be cartoned as they are without being formed into a strip pack, it is necessary to remove this strip-pack apparatus and install a cartoning machine instead of the strip-pack apparatus. Consequently, there has been the problem that the strip-pack apparatus cannot easily accommodate a change in production planning that calls for a layout change of apparatus elements.

[0004] It is an object of the present invention to provide a strip-pack apparatus that has excellent versatility and is capable of appropriately switching between forming and not forming products that have been supplied from an upstream side into a strip pack depending on circumstances on a downstream side while ensuring the manufacture of a strip pack where plural products are affixed to a strip.

<Solution to the Problem>

[0005] In order to achieve this object, the present invention is configured as follows.

[0006] A strip-pack apparatus according to a first aspect of the present invention comprises moving means, affixing means, operating mode selecting means and control means, is positioned between an upstream mechanism and a downstream mechanism that process products, and manufactures a strip pack where a plurality of the products are affixed to a strip. The moving means selectively moves the products that have been supplied from the upstream mechanism to an affixing position or the downstream mechanism. The affixing means affixes the products to a strip in the affixing position. The operating mode selecting means receives a selection between a strip pack manufacturing mode and a product passing mode. The strip pack manufacturing mode is an operating mode that causes the moving means to move the products to the affixing position. The product passing mode is an operating mode that causes the moving means to move the products to the downstream mechanism without moving the products to the affixing position. The control means controls the driving of the moving means and the affixing means depending on the operating mode that has been selected via the operating mode selecting means.

[0007] A strip-pack apparatus according to a second aspect of the present invention is the strip-pack apparatus according to the first aspect of the present invention, wherein the moving means includes conveying means and gripping means. The conveying means conveys the products that have been supplied from the upstream mechanism to a gripping position. The gripping means grips the products in the gripping position and moves the products to the affixing position.

[0008] A strip-pack apparatus according to a third aspect of the present invention is the strip-pack apparatus according to the first aspect of the present invention, wherein the moving means includes first conveying means, second conveying means and third conveying means. The first conveying means conveys the products that have been supplied from the upstream mechanism to a branching position. The second conveying means conveys the products from the branching position toward the affixing position. The third conveying means conveys the products from the branching position toward the downstream mechanism. The control means controls the driving of the first conveying means, the second conveying means and the third conveying means such that, when the product passing mode has been selected via the operating mode selecting means, the products are moved to the downstream mechanism without being moved to the affixing position.

[0009] It will be noted that the first conveying means and the second conveying means may be integrally formed, the first conveying means and the third conveying means may be integrally formed, the second conveying means and the third conveying means may be integrally formed, or the first conveying means, the second conveying means and the third conveying means may be integrally formed.

[0010] A strip-pack apparatus according to a fourth aspect of the present invention is the strip-pack apparatus according to the third aspect of the present invention, wherein the third conveying means is detachably or movably connected to the first conveying means in the branching position.

[0011] A strip-pack apparatus according to a fifth aspect of the present invention is the strip-pack apparatus according to the first aspect of the present invention, wherein the moving means includes conveying means that is capable of conveying the products selectively in a first direction or a second direction different from the first direction. The control means causes the conveying means to move the products toward the affixing position by driving the conveying means in the first direction when the strip pack manufacturing mode has been selected via the operating mode selecting means and causes the conveying means to move the products toward the downstream mechanism by driving the conveying means in the second direction when the product passing mode has been selected via the operating mode selecting means.

<Advantageous Effects of the Invention>

[0012] According to the first aspect of the present invention, when the strip pack manufacturing mode is selected by the operating mode selecting means, the driving of the moving means and the affixing means is controlled by the control means, and the primary operation of the strip-pack apparatus, that is, operation to affix the plural products to the strip, is executed. In other words, the products that have been supplied from upstream are moved to the affixing position and the strip pack is efficiently manufactured. On the other hand, when the product passing mode is selected, the products that have been supplied from upstream are delivered as they are downstream, where, for example, a cartoning machine is disposed, without being moved to the affixing position. In this manner, there is realized a strip-pack apparatus that has excellent versatility and is capable of appropriately switching between forming and not forming a strip pack depending on circumstances on the downstream side.

[0013] According to the fourth aspect of the present invention, the third conveying means is detachably or movably disposed consecutively with the downstream side of the first conveying means. Consequently, when the product passing mode has been selected, the third conveying means is kept in the state where it is disposed consecutively with the downstream side of the first conveying means, so that the products that have been supplied from the upstream mechanism are capable of being carried reliably to the downstream mechanism without being supplied to the affixing position. Additionally, when the strip pack manufacturing mode is selected as the operating mode, it suffices to remove this auxiliary conveying means.

[0014] According to the fifth aspect of the present in-

vention, the conveyance direction of the conveying means included in the moving means is capable of being switched between a direction (first direction) where the conveying means is capable of supplying the products toward the affixing position and a direction (second direction) where the conveying means is capable of carrying the products toward the downstream mechanism without supplying the products toward the affixing position. Consequently, by controlling the conveyance direction of the conveying means, it becomes possible to easily switch between the strip pack manufacturing mode and the product passing mode.

BRIEF DESCRIPTION OF THE DRAWINGS

[0015]

FIG. 1 is a block diagram of a manufacturing system according to a first embodiment of the present invention.

FIG. 2 is a side view of a strip-pack apparatus.

FIG. 3(a) is a front view of a strip pack and FIG. 3(b) is a side view of the strip pack.

FIG. 4 is a block diagram of a control system.

FIG. 5 is a block diagram of a manufacturing system according to a second embodiment of the present invention.

FIG. 6 is a side view of a strip-pack apparatus.

FIG. 7 is a block diagram of a control system.

EXPLANATION OF THE REFERENCE SIGNS

[0016]

1, 100	Strip-pack apparatus
3	Supply Conveyor (Moving Means)
3c	Auxiliary Conveyor (Moving Means)
4	Introduction Conveyor (Moving Means)
5	Drop Conveyor (Moving Means)
8	Gripping Unit (Gripping Means)
9	Affixing Unit (Affixing Means)
20	Control Unit (Control Means)
30	Operating Mode Selection Switch (Operation Mode Selecting Means)
C	Cartoning Machine (Downstream Mechanism)
SP	Strip Pack
T	Tape (Strip)
X	Bag (Product)

BEST MODES FOR CARRYING OUT THE INVENTION

[0017] Below, embodiments of the present invention will be described.

[0018] The system shown in FIG. 1 represents an overview of a manufacturing system A1 according to a first embodiment of the present invention. In this system A1, a combination weighing device W, a bag making and packaging machine P, a strip-pack apparatus 1 and a

cartoning machine C are disposed in order from an upstream side. As described in detail below, the strip-pack apparatus 1 is configured to manufacture a strip pack SP or to allow products X to pass therethrough as they are without manufacturing the strip pack SP depending on apparatus disposed on a downstream side.

[0019] The combination weighing device W respectively weighs the weights of goods that have been placed in plural measuring hoppers, performs combination calculation on the basis of these weighing values, selects a combination of weighing values that become the closest weight to a target value within a predetermined weight range, and discharges the goods from only the measuring hoppers corresponding to that selected combination to thereby obtain a set of goods with the target weight. Further, the bag making and packaging machine P forms a soft packaging material such as a plastic film into a tubular form, places the goods therein and simultaneously heat-seals the top and bottom of that tubular object to thereby package, as contents, the goods that are discharged from the combination weighing device W. Additionally, the cartoning machine C packs the products X that have been manufactured by the combination weighing device W and the bag making and packaging machine P into cardboard boxes, and an apparatus with an appropriate configuration is applicable.

[0020] A strip-pack apparatus shown in FIG. 2 is an example of the strip-pack apparatus 1. This strip-pack apparatus 1 affixes the plural products X to a tape to manufacture the strip pack SP and includes a body unit 2, a supply conveyor 3 to which the products X are supplied from an upstream apparatus, an introduction conveyor 4 that introduces, to the inside of the apparatus 1, the products X that have been supplied by this supply conveyor 3, a drop conveyor 5 that is positioned on a terminal end portion of this introduction conveyor 4, a discharge conveyor 6 that discharges, to a downstream apparatus, the strip pack SP that has been manufactured by the apparatus 1, a brush unit 7 for smoothing out wrinkles in end portions of the products X that have been introduced to the inside of the apparatus 1, a gripping unit 8 for gripping the end portions of the products X, an affixing unit 9 for affixing the products X at the end portions to the tape, and a tape feeding unit 10 for feeding the tape synchronously with the affixing operation by the affixing unit 9. Here, a roll 11 of the tape is disposed in the upper portion of the body unit 2. It will be noted that the apparatus 1 has a configuration that is independent from upstream apparatus and downstream apparatus and has high versatility.

[0021] Further, a metal detector 3 a is supported on the body unit 2 and is annexed to the supply conveyor 3 so as to surround a conveyance path of the products X. This metal detector 3a detects metal foreign bodies that are mixed inside packaging bags Y of the products X when the products X pass through a magnetic field. Additionally, an air nozzle 3b for spraying air and removing the products X being conveyed from the conveyance path

is annexed to one side in the vicinity of the downstream end of the supply conveyor 3. Moreover, an auxiliary conveyor 3c that serves as auxiliary conveying means that conveys the products X in the direction of arrow D1 is configured to extend the downstream end portion of the supply conveyor 3 and is detachably disposed consecutively with the body unit 2. And a receiving conveyor that supplies the products X to the cartoning machine C is installed consecutively with the downstream side of this auxiliary conveyor 3c. It will be noted that, in the example in the drawing, the receiving conveyor configures part of this cartoning machine C.

[0022] As shown in FIG 3, the strip pack SP that is manufactured by the strip-pack apparatus 1 is one where a plurality (in the example in the drawing, three) of the products X, in which a snack food is enclosed as contents in the packaging bags Y made of a plastic film, are affixed in an aligned state to an elongate tape T at seal portions Z on the top sides of the products X. A punch hole t1 for fastening and displaying the strip pack SP in a hanging state is formed in one end of the tape T.

[0023] Next, a control system of this strip-pack apparatus 1 will be described.

[0024] As shown in FIG. 4, the strip-pack apparatus 1 is equipped with a control unit 20 that controls the entire apparatus, and this control unit 20 outputs control signals to the supply conveyor 3, the auxiliary conveyor 3c, the introduction conveyor 4, the drop conveyor 5, the discharge conveyor 6, the brush unit 7, the gripping unit 8, the affixing unit 9 and the tape feeding unit 10. Further, this control unit 20 is connected to an operating mode selection switch 30 and controls the driving of each of the conveyors 3 to 6 and 3c and each of the units 7 to 10 such that they operate in the operating mode that has been selected by the operating mode selection switch 30. Included in the operating modes are a strip pack manufacturing mode that serves the function of manufacturing the strip pack, which is the primary function of the strip-pack apparatus 1, and a product passing mode that allows the products X that have been supplied from the bag making and packaging machine P on the upstream side to pass through as they are to the cartoning machine C on the downstream side without conveying those products X to a gripping position.

[0025] Further, the control unit 20 receives a detection signal from the metal detector 3a and determines whether the products X are normal products or abnormal products on the basis of this detection signal. Additionally, when one of the products X is an abnormal product, the control unit 20 actuates and controls the air nozzle 3b such that the air nozzle 3b removes that product X to the side of the conveyance path.

[0026] Next, an example of the operation of the strip-pack apparatus 1 will be described.

[0027] First, when the manufactured products X are to be formed into the strip pack SP, an operator flips up the upstream end side of the auxiliary conveyor 3c or removes the entire auxiliary conveyor 3c from the body unit

2 and selects the strip pack manufacturing mode with the operating mode selection switch 30. Then, as shown in FIG. 1 and FIG. 2, the products X that have been manufactured by the combination weighing device W and the bag making and packaging machine P on the upstream side and have been carried into the strip-pack apparatus 1 undergo inspection by the metal detector 3 a while being conveyed in the direction of arrow D1 by the supply conveyor 3 above. When it is determined that the products X are normal products, the products X are conveyed as they are in the direction of arrow D1, and when it is determined that the products X are abnormal products, the air nozzle 3b is actuated and the products X are removed to the side of the conveyance path.

[0028] Next, wrinkles in the end portions, that is, the seal portions, of the products X that have been determined to be normal products, have dropped from the supply conveyor 3 onto the introduction conveyor 4 below and have been conveyed to the gripping position in the direction of arrow D2 by the introduction conveyor 4 and the drop conveyor 5 are smoothed out by the brush unit 7, and the products X are moved diagonally downward of the front side in the conveyance direction D2 in a state where the end portions are gripped by the gripping unit 8. At this time, the drop conveyor 5 slants such that its front side in the conveyance direction D2 becomes lower.

[0029] Then, the plural products X are affixed by the affixing unit 9 in an affixing position to the tape T that has been let out by the tape feeding unit 10 from the tape roll 11 supported on the body unit 2 and fed to the affixing position, whereby the strip pack SP is manufactured. The strip pack SP that has been manufactured is delivered to the discharge conveyor 6 while sliding down on a slanted receiver 13 and is conveyed by this conveyor 6 in the direction of arrow D3.

[0030] On the other hand, when the manufactured products X are to be cartoned, the operator selects the product passing mode with the operating mode selection switch 30 and attaches the auxiliary conveyor 3c to the body unit 2. Thus, the products X that are conveyed by the supply conveyor 3 are delivered as they are to the auxiliary conveyor 3c and are conveyed in the downstream direction. Additionally, the control unit 20 performs control so as to stop the driving of all of the conveyors 4 to 6 and the units 7 to 10. Consequently, when the products X that have been supplied from the upstream side are determined to be normal products by the metal detector 3a, the products X are conveyed in the direction of arrow D1 and are delivered as they are, without being formed into the strip pack SP, from the supply conveyor 3 and the auxiliary conveyor 3c to the cartoning machine C on the downstream side. Additionally, when the products X are determined to be abnormal products, the air nozzle 3b is actuated and the products X are removed to the side of the conveyance path.

[0031] Further, when inspection by the metal detector 3 a is stopped and the air nozzle 3b is not actuated, the strip-pack apparatus 1 can be made to function as simple

conveying means that delivers the products X that have been supplied from the bag making and packaging machine P on the upstream side to the cartoning machine C on the downstream side.

[0032] That is, the course of the products X in the strip-pack apparatus 1 branches at the downstream end of the supply conveyor 3. When the strip pack manufacturing mode is selected, the products X are conveyed by the conveyors 4 and 5 toward the affixing position where the affixing operation by the affixing unit 9 is performed, and when the product passing mode is selected, the products X are conveyed by the conveyor 3c toward the cartoning machine C.

[0033] Next, a second embodiment will be described. It will be noted that, in order to simplify description, the same reference signs will be added to components that are the same as or similar to components that have been mentioned above, and description of those same or similar components will be omitted.

[0034] A manufacturing system shown in FIG. 5 is a manufacturing system A2 according to the second embodiment of the present invention. In this system A2, the combination weighing device W, the bag making and packaging machine P, a strip-pack apparatus 100 and the cartoning machine C are disposed in order from an upstream side. The strip-pack apparatus 100 is, like the strip-pack apparatus 1 in the first embodiment, configured to be capable of selecting whether or not to manufacture the strip pack SP depending on apparatus disposed on a downstream side.

[0035] As shown in FIG. 6, in the strip-pack apparatus 100, the metal detector 3a and the air nozzle 3b are annexed to the supply conveyor 3, but extension by the auxiliary conveyor 3c is omitted. Further, the introduction conveyor 4 has a structure where a belt is wrapped around rollers that are capable of forward and reverse rotation, and the conveyance direction thereof is configured to be switchable by the control unit 20. That is, the introduction conveyor 4 can convey the products X in the direction of arrow D2 and in the opposite direction of arrow D4. The cartoning machine C is disposed consecutively with the end portion of this introduction conveyor 4 on the opposite side of the drop conveyor 5. It will be noted that other configurations are the same as the configurations of the strip-pack apparatus 1 in the first embodiment, so detailed description thereof will be omitted.

[0036] As shown in FIG. 7, the strip-pack apparatus 100 is equipped with the control unit 20 that controls the entire apparatus, and this control unit 20 outputs control signals to the supply conveyor 3, the introduction conveyor 4, the drop conveyor 5, the discharge conveyor 6, the brush unit 7, the gripping unit 8, the affixing unit 9 and the tape feeding unit 10. Further, this control unit 20 is connected to the operating mode selection switch 30 and controls the driving of each of the conveyors 3 to 6 and each of the units 7 to 10 such that they operate in the operating mode that has been selected by the operating mode selection switch 30. The operating modes

are as has been mentioned above.

[0037] Further, the control unit 20 receives a detection signal from the metal detector 3a and determines whether the products X are normal products or abnormal products on the basis of this detection signal. Additionally, when one of the products X is an abnormal product, the control unit 20 actuates and controls the air nozzle 3b such that the air nozzle 3b removes that product X to the side of the conveyance path.

[0038] Next, an example of the operation of the strip-pack apparatus 100 will be described.

[0039] First, when the manufactured products X are to be formed into the strip pack SP, the operator selects the strip pack manufacturing mode with the operating mode selection switch 30. Then, as shown in FIG. 5 and FIG. 6, the products X that have been manufactured by the combination weighing device W and the bag making and packaging machine P on the upstream side and have been carried into the strip-pack apparatus 100 undergo inspection by the metal detector 3a while being conveyed in the direction of arrow D1 by the supply conveyor 3 above. When it is determined that the products X are normal products, the products X are conveyed as they are in the direction of arrow D1, and when it is determined that the products X are abnormal products, the air nozzle 3b is actuated and the products X are removed to the side of the conveyance path.

[0040] Next, the products X that have been determined to be normal products and have dropped from the supply conveyor 3 onto the introduction conveyor 4 are conveyed to the gripping position in the direction of arrow D2 by the introduction conveyor 4 and the drop conveyor 5, but the operation hereinafter is the same as the operation in the first embodiment, so description thereof will be omitted.

[0041] On the other hand, when the manufactured products X are to be cartoned, the operator selects the product passing mode with the operating mode selection switch 30. In this case, the control unit 20 stops the driving of all of the conveyors 5 and 6 and the units 7 to 10 and controls the introduction conveyor 4 such that the introduction conveyor 4 conveys the products X in the direction of arrow D4. Consequently, when the products X that have been supplied from the upstream side are determined to be normal products by the metal detector 3a, the products X are conveyed in the direction of arrow D1, thereafter drop onto the introduction conveyor 4, and are conveyed by this introduction conveyor 4 in the direction of arrow D4, so the products X are delivered as they are, without being formed into the strip pack SP, from the introduction conveyor 4 to the cartoning machine C on the downstream side. Additionally, when the products X are determined to be abnormal products, the air nozzle 3b is actuated and the products X are removed to the side of the conveyance path.

[0042] Further, when inspection by the metal detector 3a is stopped and the air nozzle 3b is not actuated, the strip-pack apparatus 100 can be made to function as sim-

ple conveying means that delivers the products X that have been supplied from the bag making and packaging machine P on the upstream side to the cartoning machine C on the downstream side.

[0043] Because the strip-pack apparatus is configured as described above, first, when the strip pack manufacturing mode is selected by the operating mode selection switch 30 in order to form the manufactured products X into the strip pack SP, the driving of the supply conveyor 3, the gripping unit 8 and the affixing unit 9 is controlled by the control unit 20, and the primary operation of the strip-pack apparatus 1 and 100 is executed. As a result, the products X that have been supplied from the upstream side are conveyed to the gripping position and the strip pack SP is efficiently manufactured. On the other hand, when the product passing mode is selected in order to carton the manufactured products X, the products X that have been supplied from the upstream side are conveyed as they are to the downstream side without being conveyed to the gripping position, so the strip-pack apparatus 1 and 100 function as apparatus that deliver the products X that have been received from the upstream side as they are to the cartoning machine C. In this manner, there are realized the strip-pack apparatus 1 and 100 that have excellent versatility and are capable of appropriately switching between forming and not forming the products X that have been supplied from the upstream side into the strip pack depending on a request on the downstream side.

[0044] In that case, as in the first embodiment, the auxiliary conveyor 3c can be detachably disposed consecutively with the downstream side of the supply conveyor 3 or can be given a flip-up configuration. For that reason, when the product passing mode has been selected as the operating mode, the products X that have been supplied from the upstream side can be reliably conveyed to the downstream side by the auxiliary conveyor 3c with this configuration without being conveyed to the gripping position. Additionally, when the strip pack manufacturing mode has been selected as the operating mode, it suffices to remove or flip up this auxiliary conveyor 3c.

[0045] In the second embodiment, the introduction conveyor 4 that is capable of being driven in a direction where it is capable of supplying the products X to the gripping position or a direction where it is capable of carrying the products X to the downstream side without supplying the products X to the gripping position is disposed on the downstream side and below the supply conveyor 3. Therefore, by controlling this introduction conveyor 4, it becomes possible to easily switch between when the strip pack manufacturing mode has been selected and when the product passing mode has been selected as the operating mode.

[0046] It will be noted that the present invention is not limited to the preceding embodiments that have been specifically described and various changes to the described embodiments may be made within the spirits of the present invention.

[0047] For example, in the first embodiment, the auxiliary conveyor 3c is capable of being disposed between the supply conveyor 3 and the cartoning machine C, but instead of this, the cartoning machine C may also be configured so as to be movable such that it moves close to the downstream end portion of the supply conveyor 3.

INDUSTRIAL APPLICABILITY

[0048] As described above, according to the present invention, there is realized a strip-pack apparatus that has excellent versatility and is capable of appropriately switching between forming and not forming products into a strip pack depending on circumstances on a downstream side while ensuring the efficient manufacture of a strip pack where plural products are affixed to a strip. That is, the present invention is widely suited to the technical field of strip packs.

Claims

1. A strip-pack apparatus that is positioned between an upstream mechanism and a downstream mechanism that process products and manufactures a strip pack where a plurality of the products are affixed to a strip, the strip-pack apparatus comprising:

- moving means that selectively moves the products that have been supplied from the upstream mechanism to an affixing position or the downstream mechanism;
- affixing means that affixes the products to a strip in the affixing position;
- operating mode selecting means that receives a selection between a strip pack manufacturing mode that is an operating mode that causes the moving means to move the products to the affixing position and a product passing mode that is an operating mode that causes the moving means to move the products to the downstream mechanism without moving the products to the affixing position; and
- control means that controls the driving of the moving means and the affixing means depending on the operating mode that has been selected via the operating mode selecting means.

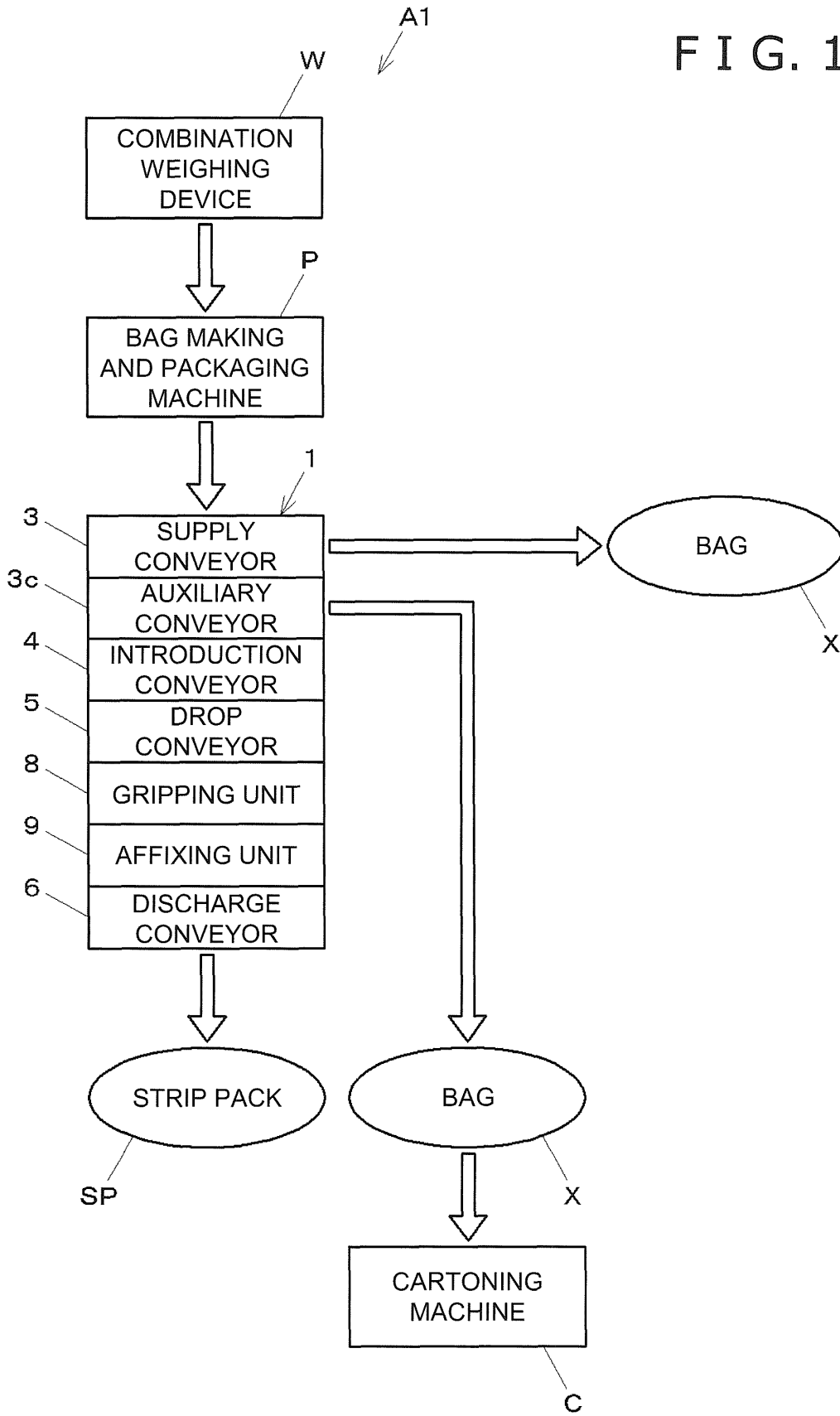
2. The strip-pack apparatus according to claim 1, wherein the moving means includes conveying means that conveys the products that have been supplied from the upstream mechanism to a gripping position and gripping means that grips the products in the gripping position and moves the products to the affixing position.

3. The strip-pack apparatus according to claim 1, wherein the moving means includes first conveying means that conveys the products that have been supplied from the upstream mechanism to a branching position, second conveying means that conveys the products from the branching position toward the affixing position and third conveying means that conveys the products from the branching position toward the downstream mechanism, and the control means controls the driving of the first conveying means, the second conveying means and the third conveying means such that, when the product passing mode has been selected via the operating mode selecting means, the products are moved to the downstream mechanism without being moved to the affixing position.

4. The strip-pack apparatus according to claim 3, wherein the third conveying means is detachably or movably connected to the first conveying means in the branching position.

5. The strip-pack apparatus according to claim 1, wherein the moving means includes conveying means that is capable of conveying the products selectively in a first direction or a second direction different from the first direction, and the control means causes the conveying means to move the products toward the affixing position by driving the conveying means in the first direction when the strip pack manufacturing mode has been selected via the operating mode selecting means and causes the conveying means to move the products toward the downstream mechanism by driving the conveying means in the second direction when the product passing mode has been selected via the operating mode selecting means.

FIG. 1



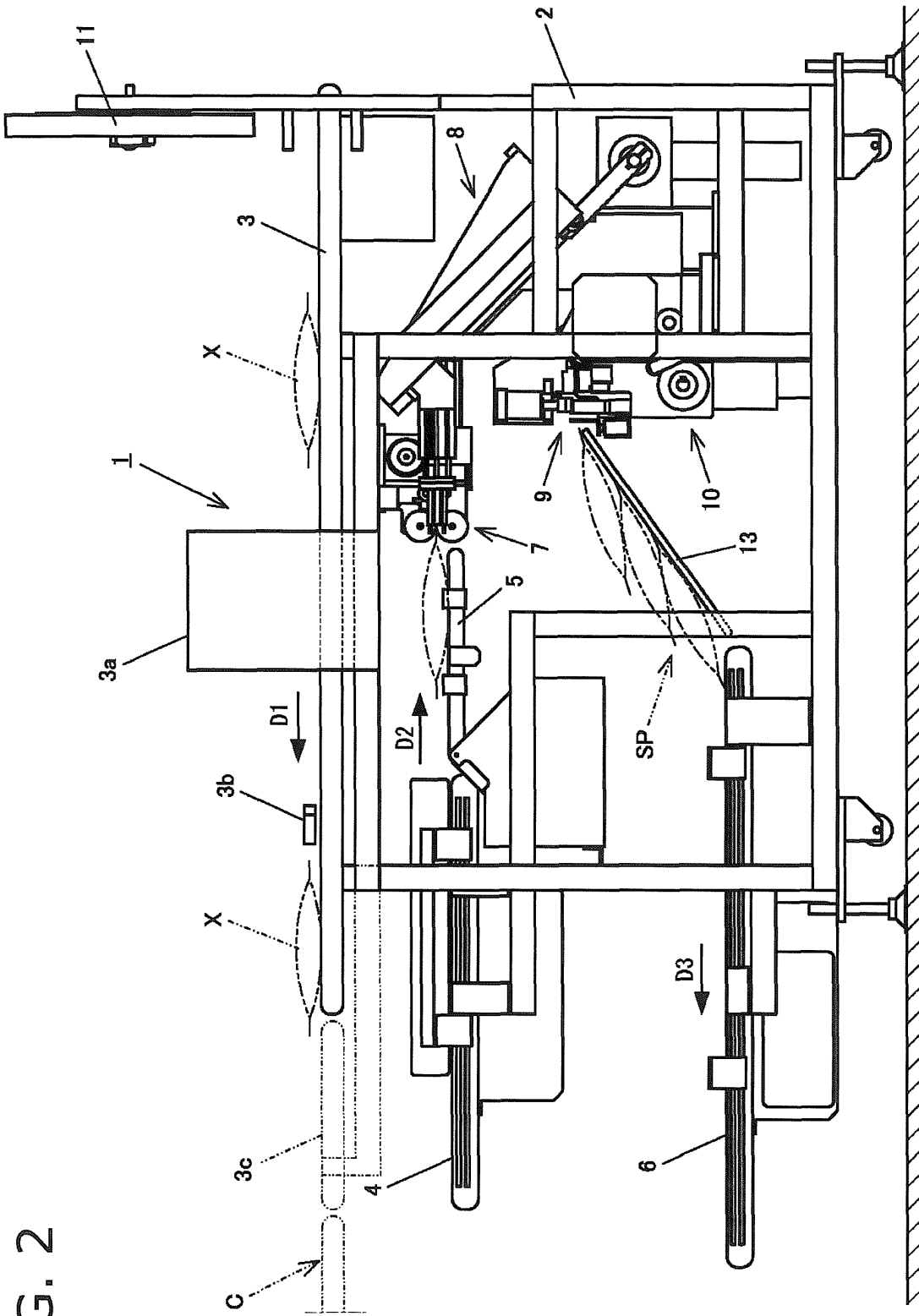


FIG. 2

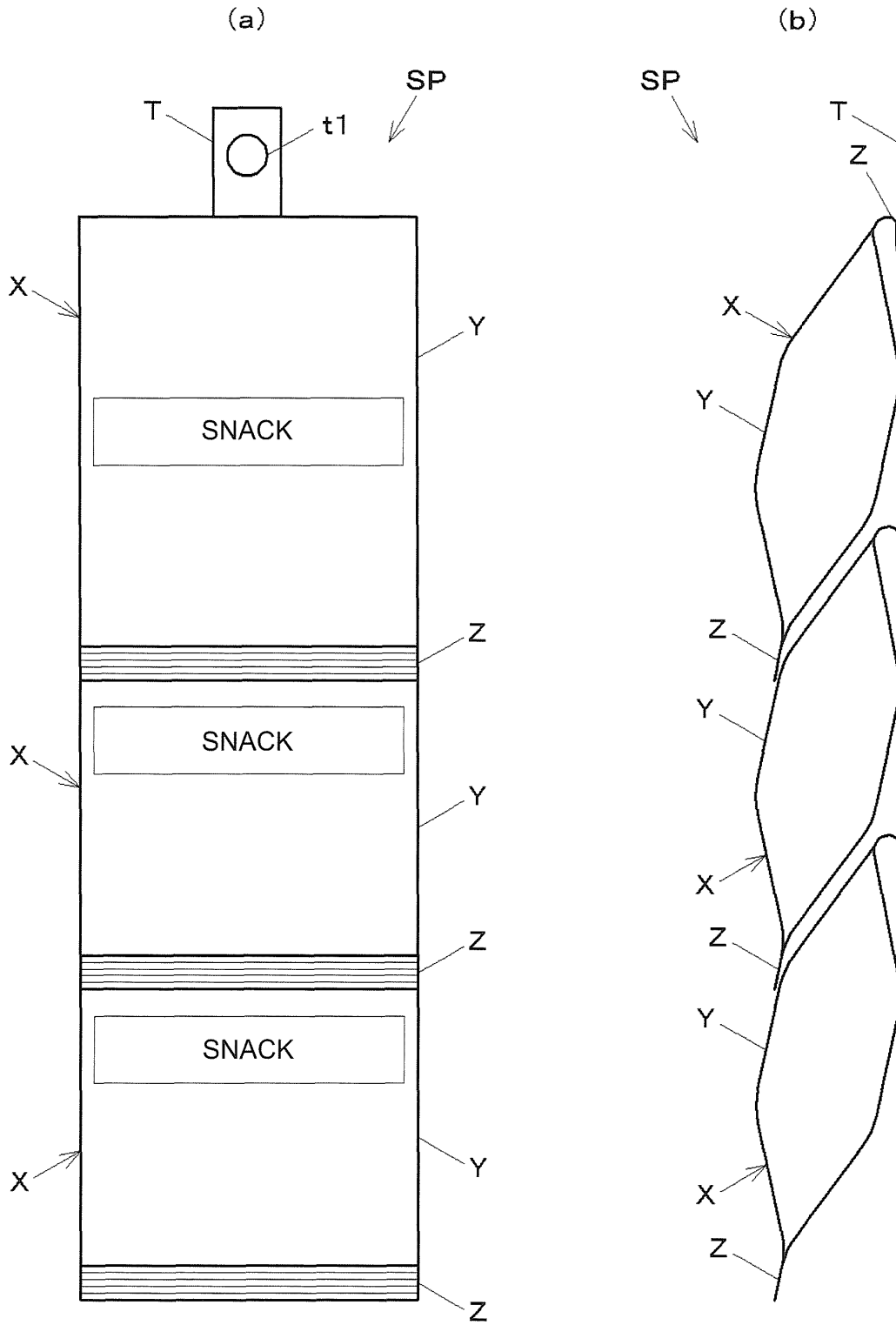


FIG. 3

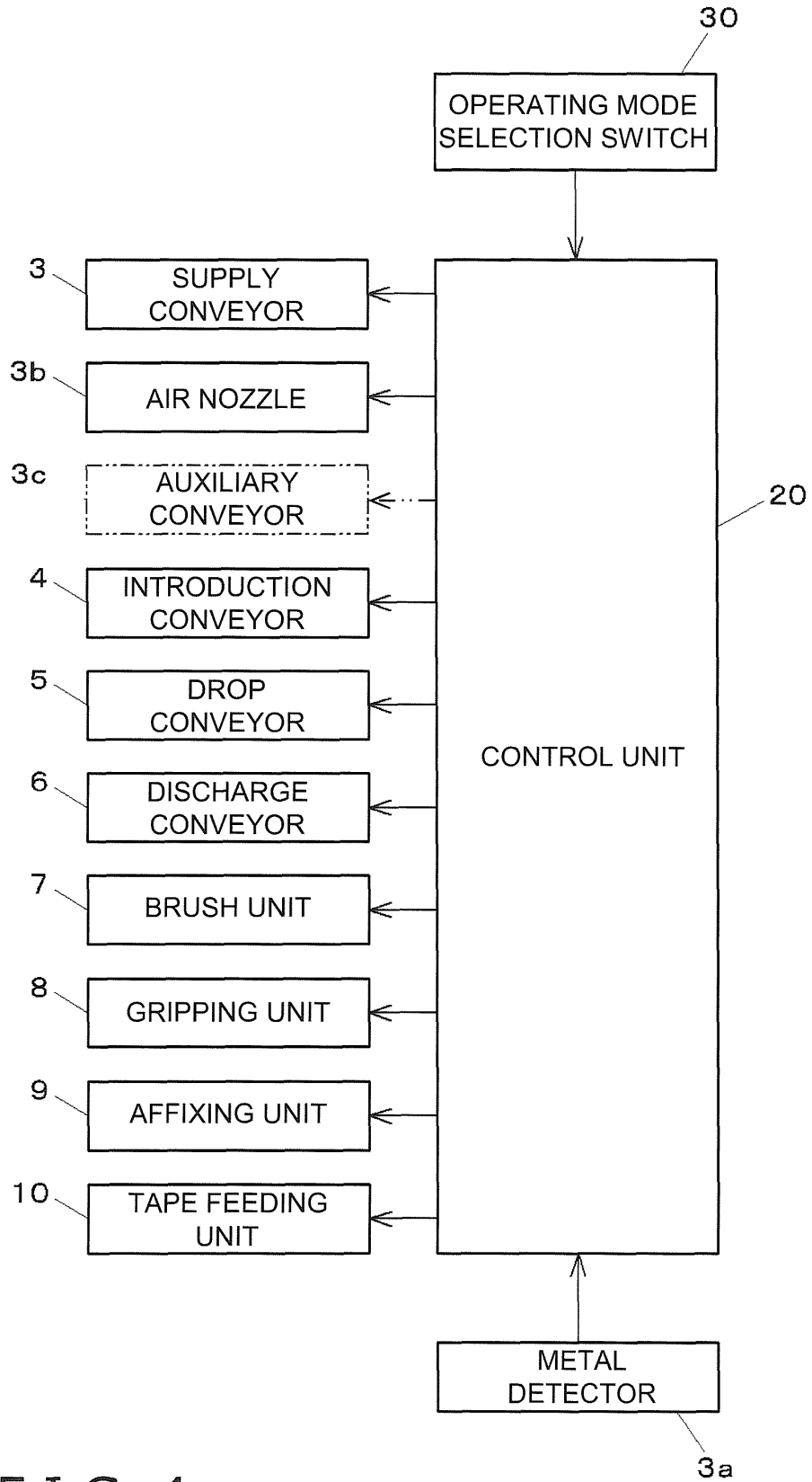


FIG. 4

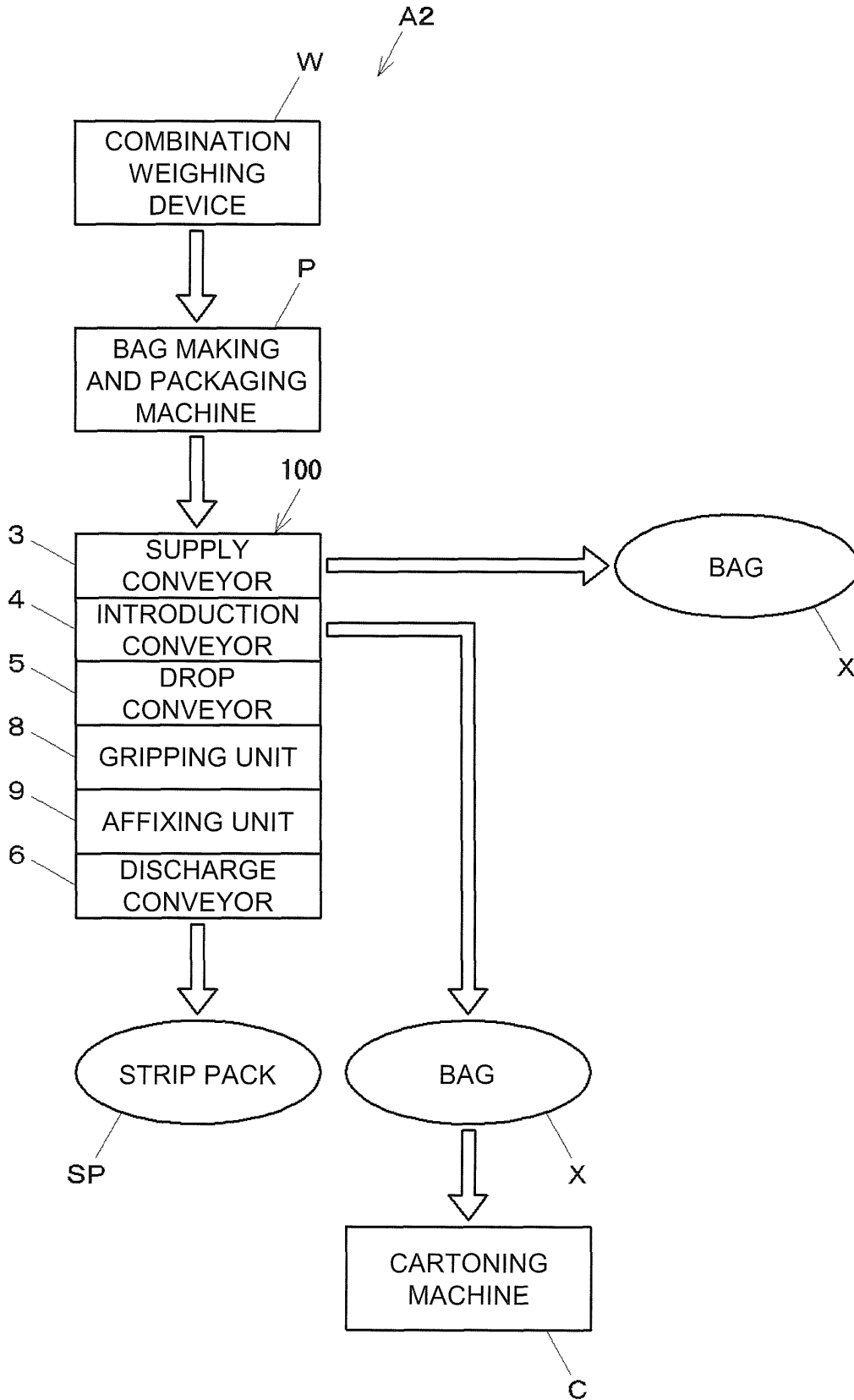


FIG. 5

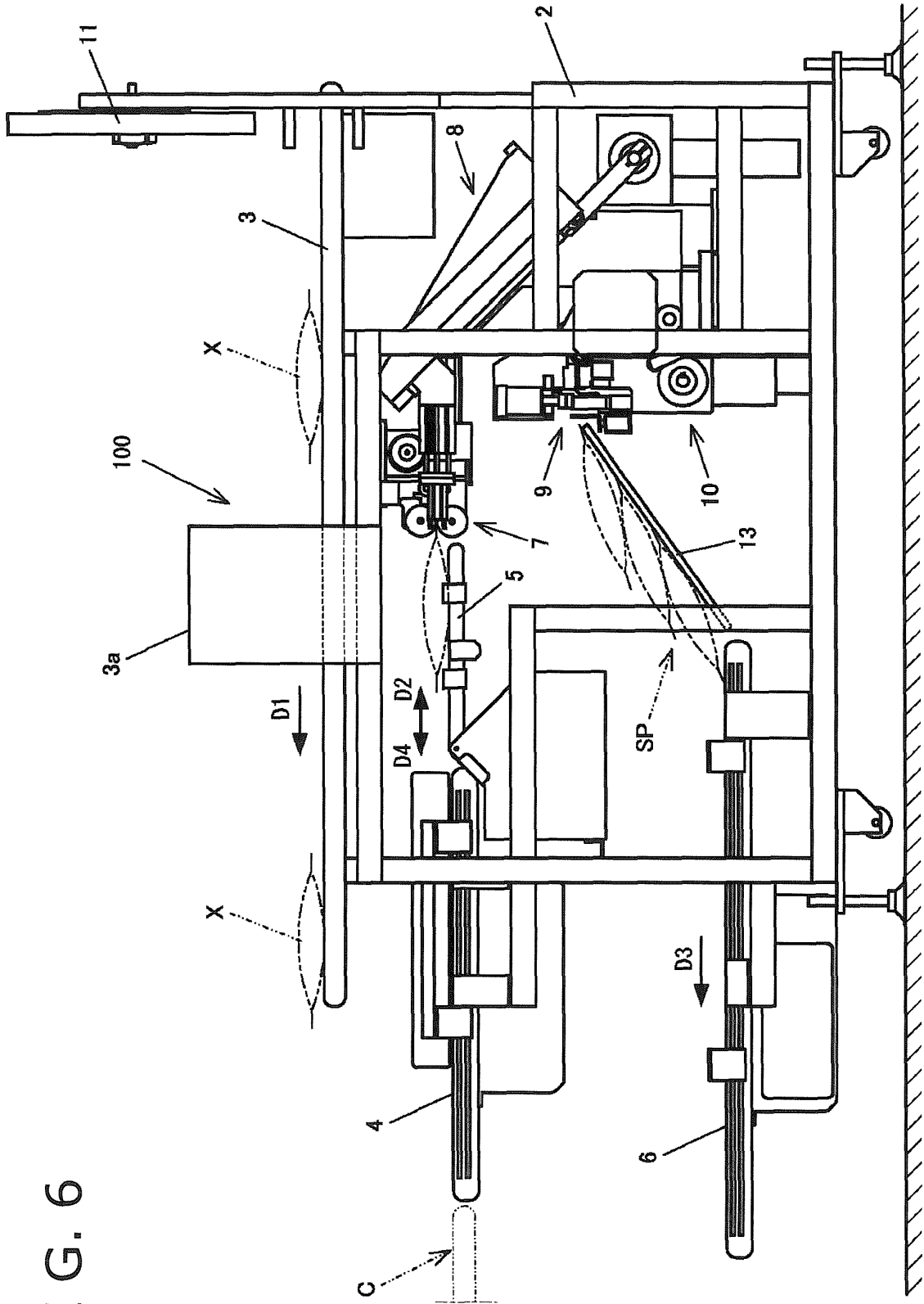


FIG. 6

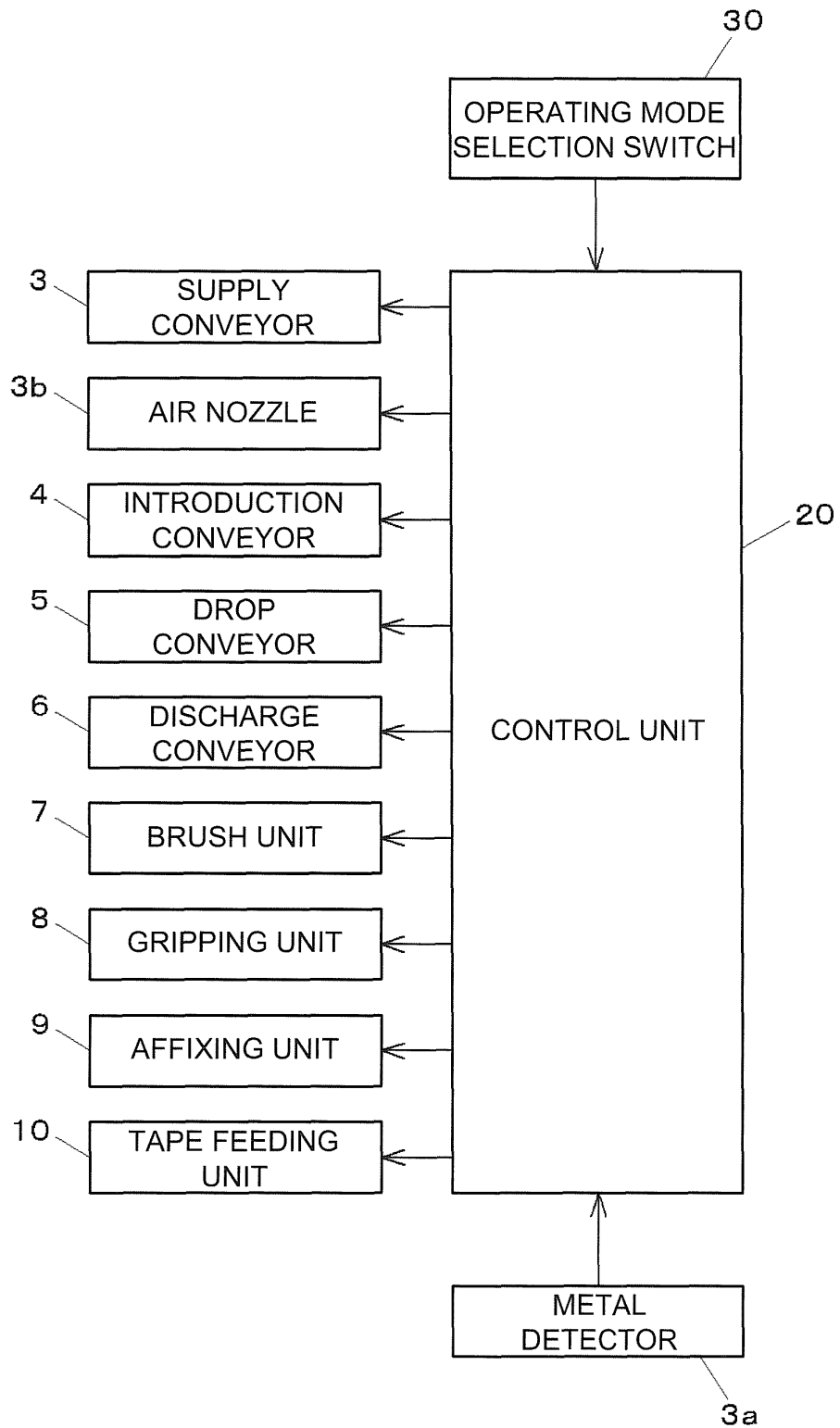


FIG. 7

INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2008/055560

A. CLASSIFICATION OF SUBJECT MATTER B65B15/04 (2006.01) i		
According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED		
Minimum documentation searched (classification system followed by classification symbols) B65B15/00-15/04		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched Jitsuyo Shinan Koho 1922-1996 Jitsuyo Shinan Toroku Koho 1996-2008 Kokai Jitsuyo Shinan Koho 1971-2008 Toroku Jitsuyo Shinan Koho 1994-2008		
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	JP 2004-90948 A (Ishida Co., Ltd.), 25 March, 2004 (25.03.04), Par. Nos. [0023] to [0028], [0046] to [0056]; all drawings & DE 60312783 T2 & EP 1394040 A2 & US 7093404 B2	1-3
A	JP 2005-200039 A (Ishida Co., Ltd.), 28 July, 2005 (28.07.05), Par. Nos. [0041] to [0047]; Figs. 1 to 2 & EP 1452447 A2 & US 7293591 B2	1-5
A	US 4003782 A (VAC-PAC MANUFACTURING CO.), 18 January, 1977 (18.01.77), Column 1, lines 55 to 68; Fig. 8 (Family: none)	1
<input type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/> See patent family annex.		
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"O" document referring to an oral disclosure, use, exhibition or other means		
"P" document published prior to the international filing date but later than the priority date claimed		
Date of the actual completion of the international search 16 April, 2008 (16.04.08)	Date of mailing of the international search report 01 May, 2008 (01.05.08)	
Name and mailing address of the ISA/ Japanese Patent Office	Authorized officer	
Facsimile No.	Telephone No.	

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REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- JP 2004182302 A [0002]
- US 3864895 A [0002]