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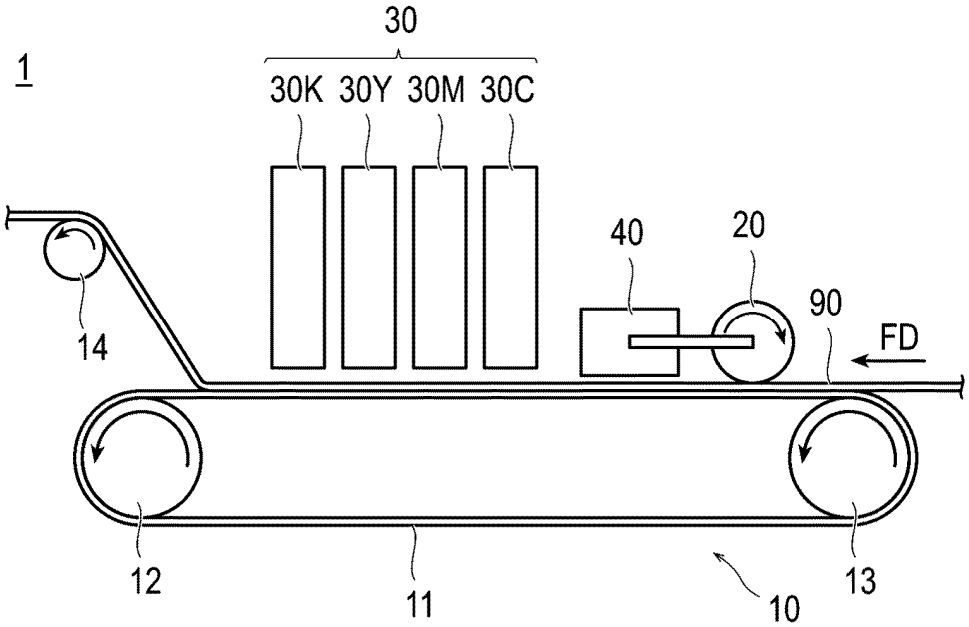
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(54) **INKJET PRINTING APPARATUS**

(57) The present invention provides an inkjet printing apparatus capable of more stably forming a high-quality image by reliably removing a foreign substance on a textile.

The inkjet printing apparatus 1 according to the present invention includes: a conveyor 10 having a conveyance belt 11 to convey a textile 90; a pressing roller 20 that comes in contact with the textile 90 and presses the textile 90 against the conveyance belt 11; an ink ejection section 30 provided downstream of the pressing roller 20 in a conveyance direction FD of the textile 90 and ejecting ink onto the textile 90 conveyed by the conveyance belt 11 to form an image; and a dust removal mechanism 40 provided between the ink ejection section 30 and the pressing roller 20 to remove a foreign substance on the textile 90 conveyed by the conveyance belt 11.

FIG. 1



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Description

Background of the Invention

1. Technical Field

[0001] The present invention relates to an inkjet printing apparatus.

2. Description of Related art

[0002] An inkjet printing apparatus is used for textile printing for forming an image on a textile such as a woven fabric, a nonwoven fabric, or a knitted fabric.

[0003] In this connection, Japanese Unexamined Patent Application Publication No. 2015-218419 discloses an inkjet recording apparatus including conveyance means for conveying a textile, recording means for ejecting ink toward the textile to perform recording, and cleaning means provided upstream of the recording means in a conveyance direction of the textile for cleaning the textile. According to the inkjet recording apparatus disclosed in Japanese Unexamined Patent Application Publication No. 2015-218419, fibers (fluffs) and dust on the textile are removed by the cleaning means, so that a high-quality image can be stably formed.

Summary of the Invention

[0004] However, the above-described inkjet recording apparatus includes a pressure roller for pressing the textile between the cleaning means and the recording means, and thus, fibers or fluffs may adhere to the textile again due to the contact between the pressure roller and the textile that has been cleaned by the cleaning means.

[0005] The present invention has been made in view of the above problem. Therefore, an object of the present invention is to provide an inkjet printing apparatus capable of stably forming a high-quality image by reliably removing foreign substances (fibers and dust) on a textile.

[0006] The above object of the present invention is achieved by the following means.

(1) An inkjet printing apparatus including: a conveyor including a conveyance belt to convey a textile; a pressing roller that comes in contact with the textile and presses the textile against the conveyance belt; an ink ejection section provided downstream of the pressing roller in a conveyance direction of the textile and ejecting ink onto the textile conveyed by the conveyance belt to form an image; and a dust removal mechanism provided between the ink ejection section and the pressing roller to remove a foreign substance on the textile conveyed by the conveyance belt.

(2) The inkjet printing apparatus according to (1), wherein the ink ejection section has a configuration in which a plurality of nozzles is arranged along a width direction orthogonal to the conveyance direction of the textile, and a plurality of the ink ejection sections that eject ink of mutually different colors is arranged along the conveyance direction of the textile.

(3) The inkjet printing apparatus according to (1), wherein a plurality of the ink ejection sections that eject ink of mutually different colors is housed in a carriage that is movable in a width direction orthogonal to the conveyance direction of the textile.

(4) The inkjet printing apparatus according to any one of (1) to (3), wherein the dust removal mechanism is a suction mechanism that sucks the foreign substance on the textile, and the suction mechanism is capable of adjusting a length of a suction region in a width direction orthogonal to the conveyance direction of the textile.

(5) The inkjet printing apparatus according to any one of (1) to (3), wherein the pressing roller and the dust removal mechanism are integrally movable between a contact position at which the pressing roller contacts the textile and a separation position at which the pressing roller is separated from the textile.

(6) The inkjet printing apparatus according to (3), wherein the pressing roller and the dust removal mechanism are integrally movable along the conveyance direction of the textile.

(7) The inkjet printing apparatus according to (6), wherein the dust removal mechanism is a suction mechanism that sucks the foreign substance on the textile, and a length of a suction region of the suction mechanism in the conveyance direction of the textile is shorter than a length of an ink ejection region of the ink ejection section in the conveyance direction of the textile.

(8) The inkjet printing apparatus according to (7), wherein a sum of the length of the suction region in the conveyance direction of the textile and a movement distance of the pressing roller and the dust removal mechanism in the conveyance direction of the textile is longer than the length of the ink ejection region in the conveyance direction of the textile.

(9) The inkjet printing apparatus according to any one of (1) to (3), wherein the dust removal mechanism includes a

cloth for catching the foreign substance.
(10) The inkjet printing apparatus according to any one of (1) to (3), wherein the dust removal mechanism includes an adhesive resin to which the foreign substance adheres.

[0007] According to the inkjet printing apparatus of the present invention, a high-quality image can be more stably formed by reliably removing foreign substances on a textile.

Brief Description of the Drawings

[0008] The advantages and features provided by one or more embodiments of the present invention will become more fully understood from the detailed description given hereinbelow and the appended drawings which are given by way of illustration only, and thus are not intended as a definition of the limits of the present invention.

Fig. 1 is a side view illustrating a schematic configuration of an inkjet printing apparatus according to a first embodiment;
Fig. 2 is a plan view illustrating the schematic configuration of the inkjet printing apparatus according to the first embodiment;
Fig. 3 is a diagram for describing a movement operation of a pressing roller and a dust removal mechanism;
Fig. 4A is a diagram illustrating an example of a suction region of the dust removal mechanism;
Fig. 4B is a diagram illustrating another example of a suction region of the dust removal mechanism;
Fig. 4C is a diagram illustrating still another example of a suction region of the dust removal mechanism;
Fig. 5 is a side view illustrating a schematic configuration of an inkjet printing apparatus according to a second embodiment;
Fig. 6 is a plan view illustrating the schematic configuration of the inkjet printing apparatus according to the second embodiment;
Fig. 7 is a diagram for describing a movement operation of a pressing roller and a dust removal mechanism;
Fig. 8 is a side view illustrating a schematic configuration of an inkjet printing apparatus according to a first modification example;
Fig. 9 is a side view illustrating a schematic configuration of an inkjet printing apparatus according to a second modification example; and
Fig. 10 is a side view illustrating a schematic configuration of an inkjet printing apparatus according to a third modification example.

Detailed Description

[0009] Hereinafter, embodiments of the present invention will be described with reference to the drawings. However, the scope of the present invention is not limited to the disclosed embodiments. Note that in the description of the drawings, the same components are denoted by the same reference signs, and redundant descriptions will not be repeated. In addition, dimensional ratios in the drawings are exaggerated for convenience of description and may be different from actual ratios.

(First embodiment)

[0010] First, an inkjet printing apparatus 1 according to a first embodiment of the present invention will be described with reference to Figs. 1 to 4. Fig. 1 is a side view illustrating a schematic configuration of the inkjet printing apparatus 1, and Fig. 2 is a plan view illustrating a schematic configuration of the inkjet printing apparatus 1. The inkjet printing apparatus 1 according to the present embodiment is a single-pass inkjet printing apparatus, and forms an image on a long textile 90 while conveying the textile 90 at a constant conveyance speed.
[0011] As illustrated in Figs. 1 and 2, the inkjet printing apparatus 1 includes a conveyor 10, a pressing roller 20, a recorder 30, and a dust removal mechanism 40. The conveyor 10, the pressing roller 20, the recorder 30, and the dust removal mechanism 40 are controlled by a controller (not illustrated).

<Conveyor 10>

[0012] The conveyor 10 conveys the textile 90. The conveyor 10 includes an endless conveyance belt 11, a driving roller 12, and a driven roller 13, and conveys the long textile 90 along a conveyance direction FD. The driving roller 12 is rotated by a drive motor (not illustrated), and the conveyance belt 11 circulates with the rotation of the driving roller 12. The driven roller 13 is provided in parallel to the driving roller 12, and rotates with the circulation movement of the conveyance belt 11. The long textile 90 is, for example, wound around an unwinding roller (not illustrated) in the form of a roll, pulled out from the

unwinding roller, and supplied onto the conveyance belt 11.

[0013] An adhesive layer (not illustrated) for temporarily fixing the textile 90 to the surface of the conveyance belt 11 is formed on the surface of the conveyance belt 11. The adhesive layer is formed by, for example, applying an adhesive made of an adhesive resin to the surface of the conveyance belt 11. The textile 90 temporarily fixed to the surface of the conveyance belt 11 by the adhesive layer is peeled off from the surface of the conveyance belt 11 by a peeling roller 14. The textile 90 peeled off from the surface of the conveyance belt 11 by the peeling roller 14 is taken up by, for example, a take-up roller (not illustrated).

<Pressing roller 20>

[0014] The pressing roller 20 comes into contact with the textile 90 and presses the textile 90 against the conveyance belt 11. The pressing roller 20 is a rigid roller formed of metal or fluorine resin, and presses the textile 90 from above to press the textile 90 against the surface of the conveyance belt 11. The pressing roller 20 is rotatably supported so as to rotate with the movement of the textile 90. The pressing roller 20 presses the textile 90 against the surface of the conveyance belt 11, thereby preventing wrinkle and lifting of the textile 90.

<Recorder 30>

[0015] The recorder 30 forms an image by ejecting ink onto the textile 90 conveyed by the conveyance belt 11. The recorder 30 is provided downstream of the pressing roller 20 in the conveyance direction FD of the textile 90, and ejects ink onto the textile 90 pressed against the conveyance belt 11 by the pressing roller 20. The recorder 30 includes first to fourth ink ejection sections 30C, 30M, 30Y, and 30K that eject ink of four colors of cyan, magenta, yellow, and black. The first to fourth ink ejection sections 30C, 30M, 30Y, and 30K are arranged at predetermined intervals along the conveyance direction FD of the textile 90.

[0016] Each of the ink ejection sections 30C, 30M, 30Y, and 30K is configured to be able to eject ink over an entire region in a width direction CD orthogonal to the conveyance direction FD of the textile 90. The ink ejection sections 30C, 30M, 30Y, and 30K include a plurality of inkjet heads 31C, 31M, 31Y, and 31K, respectively, and the plurality of inkjet heads 31C, 31M, 31Y, and 31K are arrayed in two rows along the width direction CD. Each of the inkjet heads 31C, 31M, 31Y, and 31K is provided with a plurality of nozzles (not illustrated) to eject ink along the width direction CD. The ink ejection sections 30C, 30M, 30Y, and 30K eject ink from the nozzles provided in the inkjet heads 31C, 31M, 31Y, and 31K to form an image on the textile 90. The configuration of a recorder (ink ejection section) in the single-pass inkjet printing apparatus is known, and thus, a more detailed description of the recorder 30 will be omitted.

<Dust removal mechanism 40>

[0017] The dust removal mechanism 40 removes foreign substances (fibers and dust) on the textile 90 conveyed by the conveyance belt 11. The dust removal mechanism 40 is provided between the pressing roller 20 and the recorder 30, and removes foreign substances on the textile 90 pressed against the conveyance belt 11 by the pressing roller 20. The dust removal mechanism 40 is a suction mechanism configured to suck and collect foreign substances by negative pressure, and removes the foreign substances on the textile 90 by suction. The dust removal mechanism 40 is configured to be movable integrally with the pressing roller 20.

[0018] Fig. 3 is a diagram for describing a movement operation of the pressing roller 20 and the dust removal mechanism 40. In the inkjet printing apparatus 1 according to the present embodiment, the pressing roller 20 and the dust removal mechanism 40 are connected to each other by a connection member 50, and integrally move in the vertical direction. More specifically, as illustrated in Fig. 3, the pressing roller 20 and the dust removal mechanism 40 integrally move between a contact position at which the pressing roller 20 is in contact with the textile 90 and a separation position at which the pressing roller 20 is separated from the textile 90. While the textile 90 is not being supplied to the conveyance belt 11, the pressing roller 20 and the dust removal mechanism 40 are maintained at the separation position. The pressing roller 20 and the dust removal mechanism 40 are held by, for example, a movement mechanism including a compressed air supply mechanism and a spring (not illustrated), and are displaced between the contact position and the separation position depending on whether or not compressed air is supplied.

[0019] In the inkjet printing apparatus 1 according to the present embodiment configured as described above, an image is formed by the recorder 30 on the textile 90 conveyed by the conveyance belt 11. More specifically, the textile 90 supplied to the conveyance belt 11 is first pressed against the conveyance belt 11 by the pressing roller 20. Next, dust removal by the dust removal mechanism 40 is performed on the textile 90 pressed against the conveyance belt 11 by the pressing roller 20, so that foreign substances (fibers and dust) on the textile 90 are removed. Then, ink is ejected from the first to fourth ink ejection sections 30C, 30M, 30Y, and 30K onto the textile 90 from which the foreign substances have been removed by the dust removal mechanism 40, and a desired color image is formed on the textile 90.

[0020] In the inkjet printing apparatus 1 according to the present embodiment, the dust removal mechanism 40 is disposed between the pressing roller 20 and the recorder 30. Thus, for example, even if foreign substances adhere to the textile 90 by the pressing roller 20, the foreign substances are removed by the dust removal mechanism 40. Furthermore, since no other member is present between the dust removal mechanism 40 and the recorder 30, no foreign substance adheres again to the textile 90 between the dust removal mechanism 40 and the recorder 30. That is, according to the inkjet printing apparatus 1 of the present embodiment, the foreign substances on the textile 90 can be reliably removed, and a high-quality image can be more stably formed on the textile 90.

<Size adjustment of suction region of dust removal mechanism>

[0021] Next, the configuration of the dust removal mechanism 40 will be described in more detail with reference to Fig. 4. The dust removal mechanism 40 in the present embodiment is a suction mechanism that sucks foreign substances on the textile 90, and is configured to be able to adjust the length of a suction region in the width direction CD of the textile 90.

[0022] Fig. 4A is a diagram illustrating a schematic configuration of the dust removal mechanism 40 in a case where an image is formed on the textile 90 having the maximum width, and Fig. 4B is a diagram illustrating a schematic configuration of the dust removal mechanism 40 in a case where an image is formed on the textile 90 having a normal width narrower than the maximum width. Fig. 4C is a diagram illustrating a schematic configuration of the dust removal mechanism 40 in a case where an image is formed on the textile 90 having a width narrower than the normal width. Figs. 4A to 4C illustrate the dust removal mechanism 40 as viewed from the textile 90 side (lower side).

[0023] As illustrated in Fig. 4A, the dust removal mechanism 40 includes three suction ports 40H extending in the width direction CD of the textile 90. Each suction port 40H has a first length L1 in the width direction CD of the textile 90. The first length L1 is slightly shorter than a width W1 of the textile 90 so that a side end 90E of the textile 90 is not sucked by the dust removal mechanism 40.

[0024] On the other hand, as illustrated in Fig. 4B, when an image is formed on the textile 90 having the normal width, two cover members 41B are attached to the suction ports 40H of the dust removal mechanism 40 to reduce the length of the suction region. The reduced suction region (the portion of the suction ports 40H exposed from the cover members 41B) has a second length L2 in the width direction CD of the textile 90. The second length L2 is slightly shorter than a width W2 of the textile 90 so that the side end 90E of the textile 90 is not sucked by the dust removal mechanism 40.

[0025] Similarly, as illustrated in Fig. 4C, when an image is formed on the textile 90 having a narrow width, two cover members 41C are attached to the suction ports 40H of the dust removal mechanism 40, so that the length of the suction region is further reduced. The further reduced suction region (the portion of the suction ports 40H exposed from the cover members 41C) has a third length L3 in the width direction CD of the textile 90. The third length L3 is slightly shorter than a width W3 of the textile 90 so that the side end 90E of the textile 90 is not sucked by the dust removal mechanism 40.

[0026] As described above, in the inkjet printing apparatus 1 according to the present embodiment, the length of the suction region of the dust removal mechanism 40 is adjusted according to the width of the textile 90 such that the side end 90E of the textile 90 is not sucked by the dust removal mechanism 40. The configuration described above prevents the occurrence of a situation in which the textile 90 is peeled off from the conveyance belt 11 or the side end 90E of the textile 90 is frayed due to the side end 90E of the textile 90 being sucked. As a result, a high-quality image can be formed on the textile 90 more stably.

(Second embodiment)

[0027] Next, an inkjet printing apparatus 1 according to a second embodiment of the present invention will be described with reference to Figs. 5 to 7. The inkjet printing apparatus 1 according to the present embodiment is a scanning inkjet printing apparatus.

[0028] Fig. 5 is a side view illustrating a schematic configuration of the inkjet printing apparatus 1, and Fig. 6 is a plan view illustrating a schematic configuration of the inkjet printing apparatus 1. The inkjet printing apparatus 1 according to the present embodiment forms an image on a textile 90 while intermittently conveying the textile 90.

[0029] As illustrated in Figs. 5 and 6, the inkjet printing apparatus 1 includes a conveyor 10, a pressing roller 20, a recorder 30, and a dust removal mechanism 40. The conveyor 10, the pressing roller 20, the recorder 30, and the dust removal mechanism 40 are controlled by a controller (not illustrated). Note that the detailed description of the conveyor 10, the pressing roller 20, and the dust removal mechanism 40 is omitted, because the configurations of the conveyor 10, the pressing roller 20, and the dust removal mechanism 40 are the same as those in the first embodiment.

[0030] In the inkjet printing apparatus 1 according to the present embodiment, ink ejection sections 30C, 30M, 30Y, and 30K of four colors are housed in a carriage 32 which is movable in the width direction CD of the textile 90. The ink ejection sections 30C, 30M, 30Y, and 30K of four colors are arranged along the width direction CD of the textile 90, and each of the ink ejection sections 30C, 30M, 30Y, and 30K includes a plurality of inkjet heads (not illustrated) arranged along the conveyance direction FD of the textile 90. An image is formed on the textile 90 by the carriage 32 moving along a rail 33 from

one side end to the other side end of the textile 90 while the ink ejection sections 30C, 30M, 30Y, and 30K eject ink.

[0031] While the carriage 32 moves from one side end to the other side end of the textile 90, the conveyance belt 11 is temporarily stopped, and an image for one scan is formed on the textile 90 in a stopped state. Then, after an image for one scan is formed on the textile 90, the conveyance belt 11 is temporarily operated to move the textile 90 along the conveyance direction FD by a predetermined intermittent feed amount. The configuration of a recorder (ink ejection section) in the scanning inkjet printing apparatus is also known, and thus, a more detailed description of the recorder 30 will be omitted.

[0032] As in the first embodiment, the pressing roller 20 and the dust removal mechanism 40 are configured to be integrally movable between a contact position at which the pressing roller 20 is in contact with the textile 90 and a separation position at which the pressing roller 20 is separated from the textile 90. In addition, in the inkjet printing apparatus 1 according to the present embodiment, the pressing roller 20 and the dust removal mechanism 40 are configured to be integrally movable along the conveyance direction FD of the textile 90.

[0033] Fig. 7 is a diagram for describing a movement operation of the pressing roller 20 and the dust removal mechanism 40. As illustrated in Fig. 7, in the inkjet printing apparatus 1 according to the present embodiment, the pressing roller 20 and the dust removal mechanism 40 are driven by a movement mechanism (not illustrated), and integrally move back and forth between a first position and a second position in the conveyance direction FD of the textile 90. Note that the pressing roller 20 and the dust removal mechanism 40 may move back and forth in synchronization with the operation of the conveyance belt 11 and the recorder 30, or may move back and forth regardless of (asynchronously with) the operation of the conveyance belt 11 and the recorder 30.

[0034] Here, a length L4 of a suction region (region in which suction ports 40H are formed) of the dust removal mechanism 40 in the conveyance direction FD of the textile 90 is shorter than a length L5 of an ink ejection region (region in which nozzles are formed) of the ink ejection sections 30C, 30M, 30Y, 30K. On the other hand, the sum of the length L4 of the suction region of the dust removal mechanism 40 and a movement distance (distance between the first position and the second position) L6 of the pressing roller 20 and the dust removal mechanism 40 is longer than the length L5 of the ink ejection region of the ink ejection sections 30C, 30M, 30Y, and 30K.

[0035] As described above, in the inkjet printing apparatus 1 according to the present embodiment, while the textile 90 is intermittently conveyed in synchronization with the image forming operation of the recorder 30, the pressing roller 20 and the dust removal mechanism 40 integrally move back and forth along the conveyance direction FD of the textile 90. According to such a configuration, the dust removal mechanism 40 can be moved in synchronization with the tilting operation in which the pressing roller 20 moves back and forth along the conveyance direction FD of the textile 90, and even in a case where the textile 90 is intermittently conveyed, the entire surface of the textile 90 can be sucked by the dust removal mechanism 40. As a result, foreign substances on the textile 90 are reliably removed, and a high-quality image can be more stably formed on the textile 90.

[0036] Note that, if the length L4 of the suction region of the dust removal mechanism 40 is short in a case where the dust removal mechanism 40 does not move back and forth, the suction ports come in contact with a part of the textile 90 only at the moment when the textile 90 is intermittently conveyed, so that a sufficient dust removal effect cannot be obtained. However, according to the inkjet printing apparatus 1 of the present embodiment, the dust removal mechanism 40 moves back and forth, and thus, the suction ports are brought into contact with a wide area of the textile 90 in the conveyance direction FD. Therefore, the length L4 of the suction region of the dust removal mechanism 40 can be shortened. That is, the dust removal mechanism 40 can be downsized (slimmed down).

[0037] Furthermore, it is only necessary that the sum of the length L4 of the suction region of the dust removal mechanism 40 and the movement distance L6 of the pressing roller 20 and the dust removal mechanism 40 be longer than the intermittent feed amount (feed amount per one conveyance) of the textile 90. In this case, the length L4 of the suction region of the dust removal mechanism 40 may be shorter than the intermittent feed amount of the textile 90. In the scanning inkjet printing apparatus, the intermittent feed amount of the textile 90 is set to a value equal to or smaller than the length L5 of the ink ejection region of the ink ejection sections 30C, 30M, 30Y, and 30K.

[0038] The present invention is not limited to the above-described embodiments, and various modifications can be made within the scope of the claims.

[0039] For example, the above-described first and second embodiments have described, as an example, the case where an image is formed on the long textile 90. However, the textile on which an image is to be formed is not limited to a long textile, and may be a cut textile. Note that the long textile 90 is not limited to a long rolled shape, and may be a long folded textile.

[0040] In the above-described first and second embodiments, the pressing roller and the dust removal mechanism are configured to be integrally movable. However, unlike the above-described first and second embodiments, the pressing roller and the dust removal mechanism may be configured to be movable independently of each other. Specifically, for example, the pressing roller 20 and the dust removal mechanism 40 may not be connected by a connection member, and the pressing roller 20 and the dust removal mechanism 40 may be configured to be movable independently in the vertical direction as illustrated in Fig. 8.

[0041] Furthermore, in the first and second embodiments described above, the dust removal mechanism 40 is

configured such that the length L1 of each of the suction ports 40H is shorter than the width W1 of the textile 90 having the maximum width. However, unlike the above-described first and second embodiments, the length L1 of each of the suction ports 40H may be longer than the width W1 of the textile 90 having the maximum width. In addition, the length of the suction region of the dust removal mechanism 40 in the width direction CD of the textile 90 may not be adjusted according to the width of the textile 90. Note that the dust removal mechanism 40 is not limited to having three suction ports 40H, and may have, for example, one suction port or four or more suction ports. The shape of the suction port 40H is also not limited to a rectangular shape.

[0042] In the second embodiment described above, the length L4 of the suction region of the dust removal mechanism 40 in the conveyance direction FD of the textile 90 is shorter than the length L5 of the ink ejection region of the ink ejection sections 30C, 30M, 30Y, and 30K. However, unlike the above-described second embodiment, the length L4 of the suction region of the dust removal mechanism 40 may be longer than the length L5 of the ink ejection region of the ink ejection sections 30C, 30M, 30Y, and 30K. In this case, it is not necessary that the dust removal mechanism 40 moves back and forth along the conveyance direction FD of the textile 90. Specifically, for example, the pressing roller 20 and the dust removal mechanism 40 may not be connected by a connection member, the dust removal mechanism 40 may be fixed, and only the pressing roller 20 may move back and forth, as illustrated in Fig. 9.

[0043] In addition, the first and second embodiments have described, as an example, the case where a suction mechanism for sucking foreign substances on the textile 90 is used as the dust removal mechanism 40. However, the dust removal mechanism 40 is not limited to the suction mechanism. For example, as the dust removal mechanism 40, a cloth (e.g., a pile fabric) for catching foreign substances or an adhesive resin to which foreign substances adhere may be used. The cloth for catching foreign substances and the adhesive resin to which foreign substances adhere are provided, for example, in the form of a dust removal roller between the pressing roller 20 and the recorder 30 as illustrated in Fig. 10. Alternatively, a cloth for catching foreign substances may be provided so as to cover the textile 90 between the pressing roller 20 and the recorder 30.

[0044] While the embodiments of the present invention have been described and illustrated in detail, the disclosed embodiments have been created for purposes of illustration and example only, and not limitation. The scope of the present invention is to be interpreted by the wording of the appended claims.

Reference Signs List

[0045]

1	Inkjet printing apparatus
10	Conveyor
11	Conveyance belt
12	Driving roller
13	Driven roller
14	Peeling roller
20	Pressing roller
30	Recorder
30C, 30M, 30Y, 30K	Ink ejection section
31C, 31M, 31Y, 31K	Inkjet head
32	Carriage
33	Rail
40	Dust removal mechanism
40H	Suction port
41B, 41C	Cover member
50	Connection member
90	Textile
90E	Side end
FD	Conveyance direction
CD	Width direction

Claims

1. An inkjet printing apparatus (1) comprising:

a conveyor (10) including a conveyance belt (11) to convey a textile (90);
a pressing roller (20) that comes in contact with the textile (90) and presses the textile (90) against the conveyance

belt (11);
an ink ejection section (30C, 30M, 30Y, 30K) provided downstream of the pressing roller (20) in a conveyance direction of the textile (90) and ejecting ink onto the textile (90) conveyed by the conveyance belt (11) to form an image; and
a dust removal mechanism (40) provided between the ink ejection section (30C, 30M, 30Y, 30K) and the pressing roller (20) to remove a foreign substance on the textile (90) conveyed by the conveyance belt (11).

2. The inkjet printing apparatus (1) according to claim 1, wherein

the ink ejection section (30C, 30M, 30Y, 30K) has a configuration in which a plurality of nozzles is arranged along a width direction orthogonal to the conveyance direction of the textile (90), and
a plurality of the ink ejection sections (30C, 30M, 30Y, 30K) that eject ink of mutually different colors is arranged along the conveyance direction of the textile (90).

3. The inkjet printing apparatus (1) according to claim 1, wherein a plurality of the ink ejection sections (30C, 30M, 30Y, 30K) that eject ink of mutually different colors is housed in a carriage (32) that is movable in a width direction orthogonal to the conveyance direction of the textile (90).

4. The inkjet printing apparatus (1) according to any one of claims 1 to 3, wherein

the dust removal mechanism (40) is a suction mechanism that sucks the foreign substance on the textile (90), and the suction mechanism is capable of adjusting a length of a suction region in a width direction orthogonal to the conveyance direction of the textile (90).

5. The inkjet printing apparatus (1) according to any one of claims 1 to 3, wherein the pressing roller (20) and the dust removal mechanism (40) are integrally movable between a contact position at which the pressing roller (20) contacts the textile (90) and a separation position at which the pressing roller (20) is separated from the textile (90).

6. The inkjet printing apparatus (1) according to claim 3, wherein the pressing roller (20) and the dust removal mechanism (40) are integrally movable along the conveyance direction of the textile (90).

7. The inkjet printing apparatus (1) according to claim 6, wherein

the dust removal mechanism (40) is a suction mechanism that sucks the foreign substance on the textile (90), and
a length of a suction region of the suction mechanism in the conveyance direction of the textile (90) is shorter than a length of an ink ejection region of the ink ejection section (30C, 30M, 30Y, 30K) in the conveyance direction of the textile (90).

8. The inkjet printing apparatus (1) according to claim 7, wherein a sum of the length of the suction region in the conveyance direction of the textile (90) and a movement distance of the pressing roller (20) and the dust removal mechanism (40) in the conveyance direction of the textile (90) is longer than the length of the ink ejection region in the conveyance direction of the textile (90).

9. The inkjet printing apparatus (1) according to any one of claims 1 to 3, wherein the dust removal mechanism (40) includes a cloth for catching the foreign substance.

10. The inkjet printing apparatus (1) according to any one of claims 1 to 3, wherein the dust removal mechanism (40) includes an adhesive resin to which the foreign substance adheres.

FIG. 1

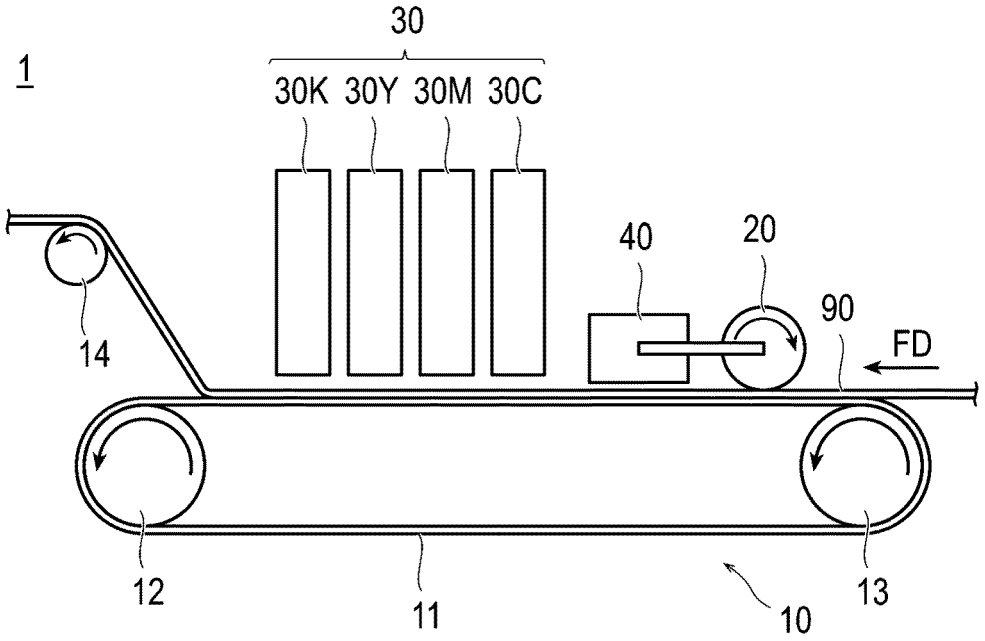

1
30
30K 30Y 30M 30C
40
20
90
FD
14
12
11
10
13

FIG. 2

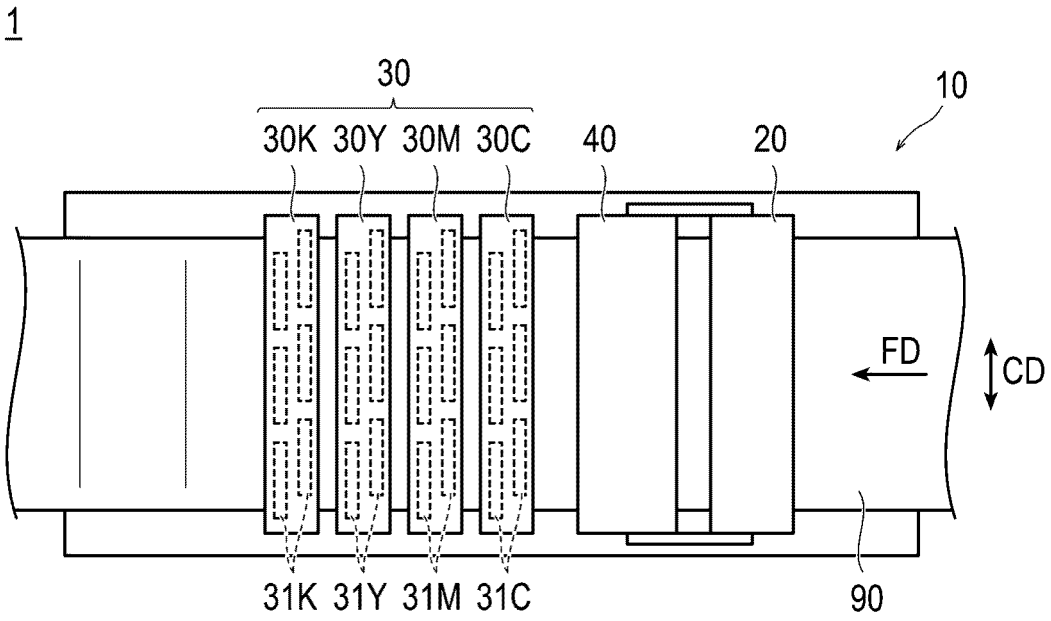

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FIG. 3

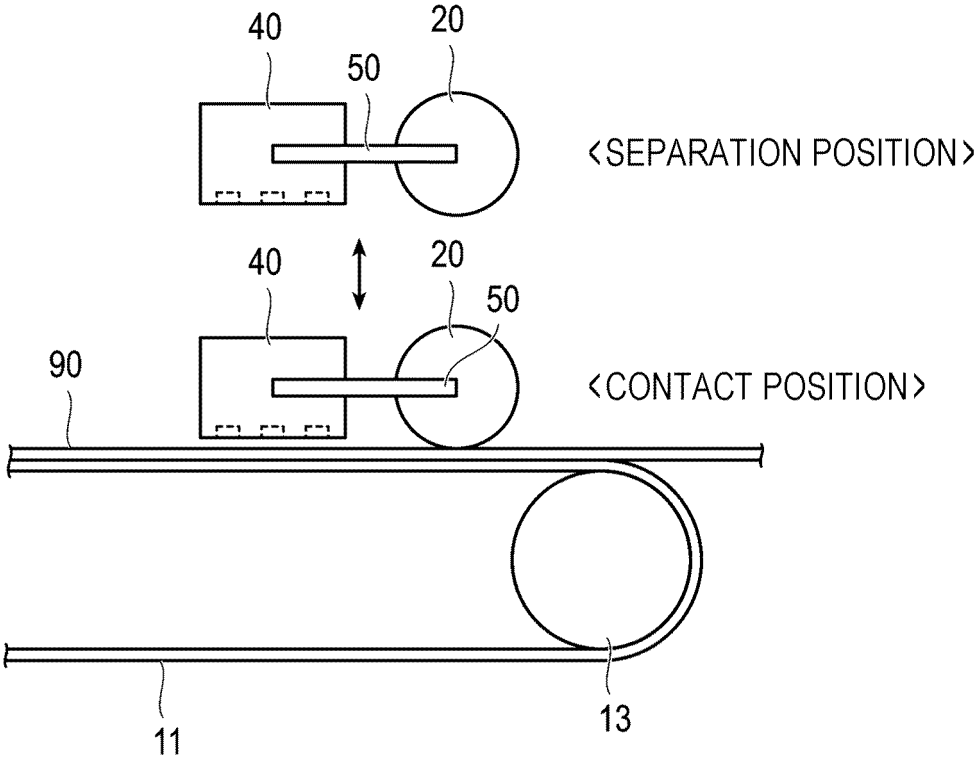

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FIG. 4A

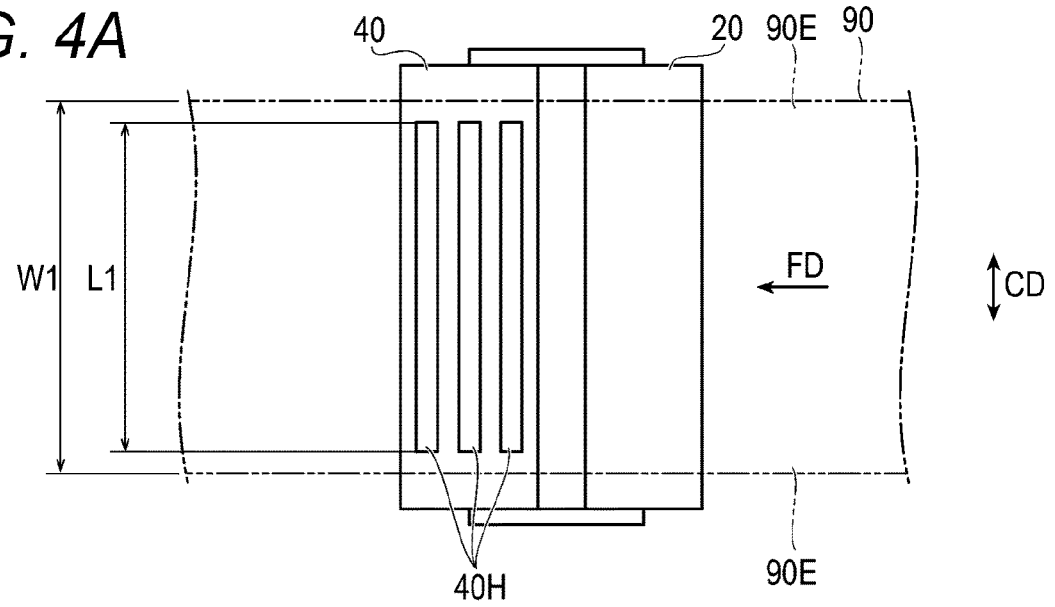


FIG. 4B

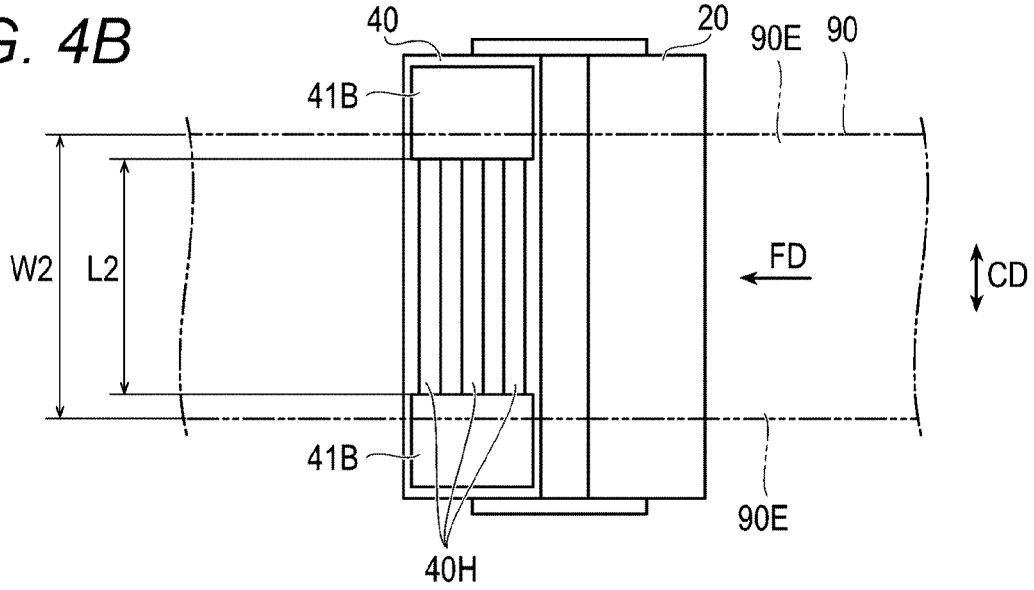


FIG. 4C

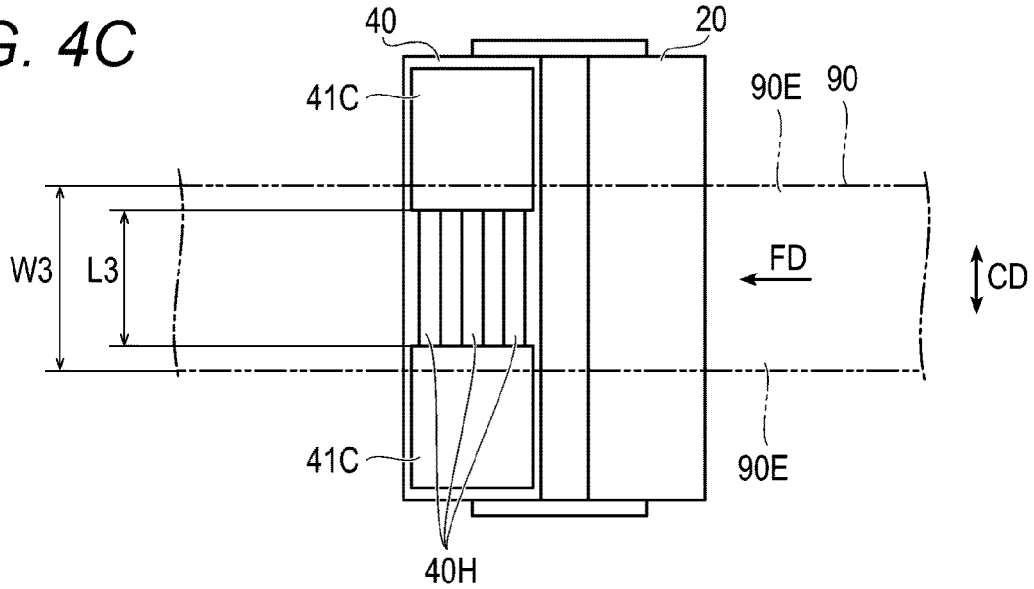


FIG. 5

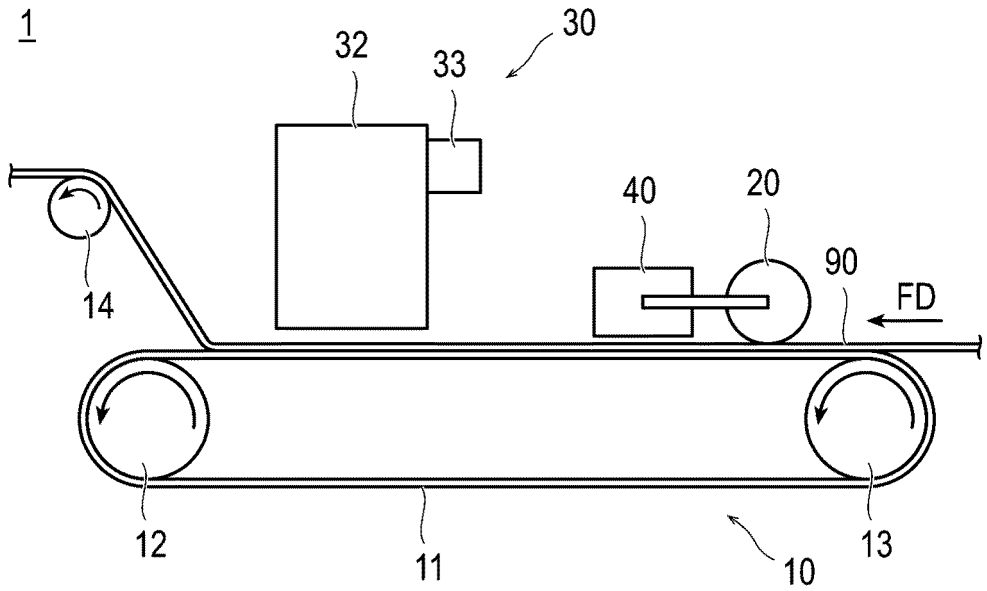

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FIG. 6

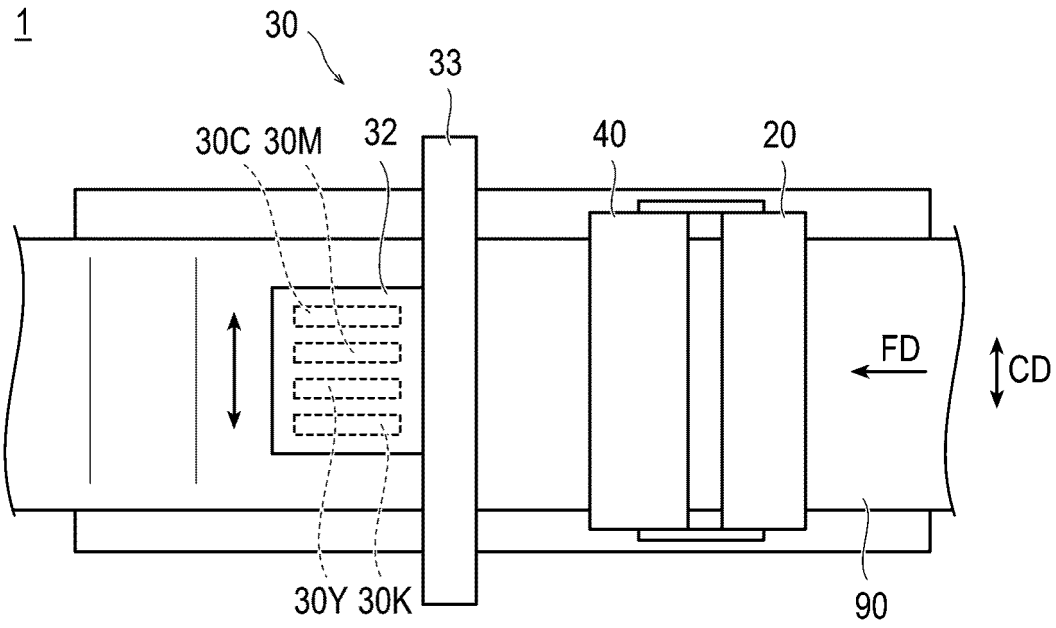

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FIG. 7

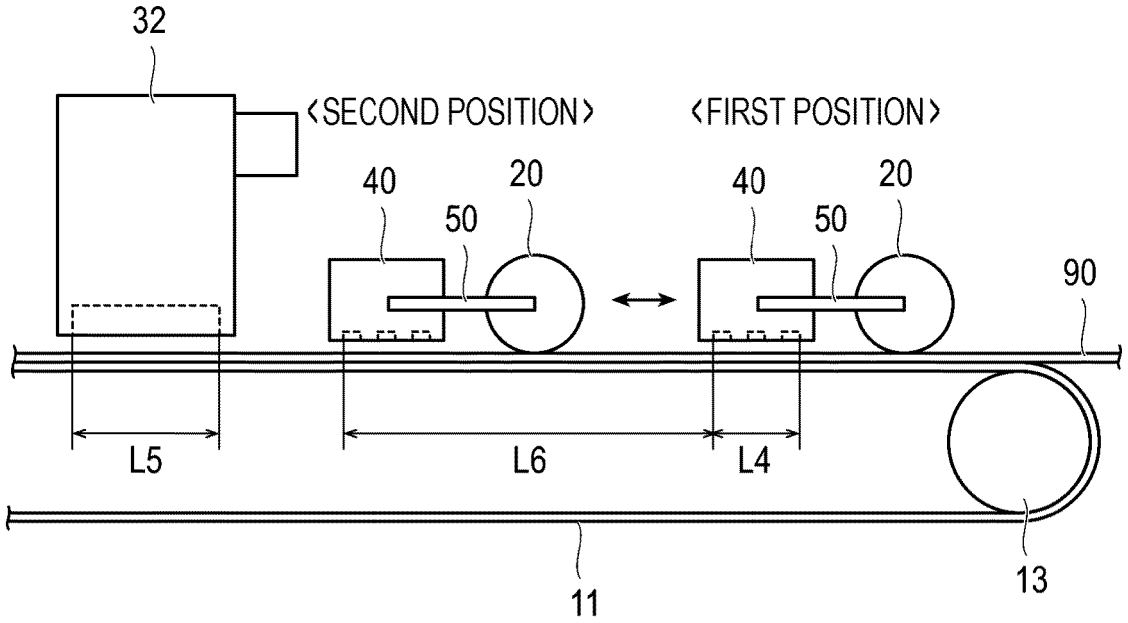

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〈FIRST POSITION〉
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FIG. 8

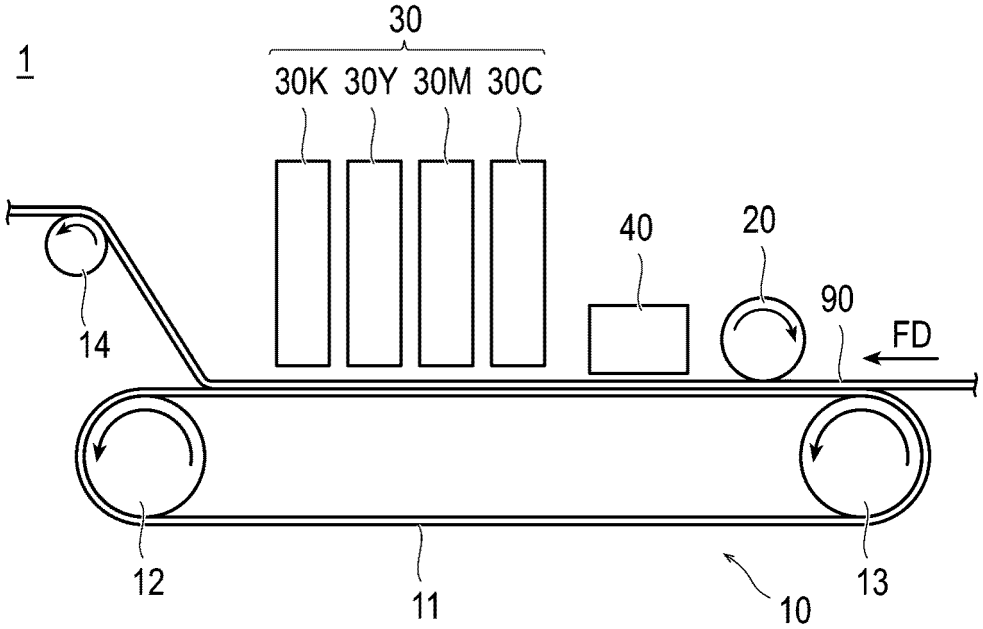

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FIG. 9

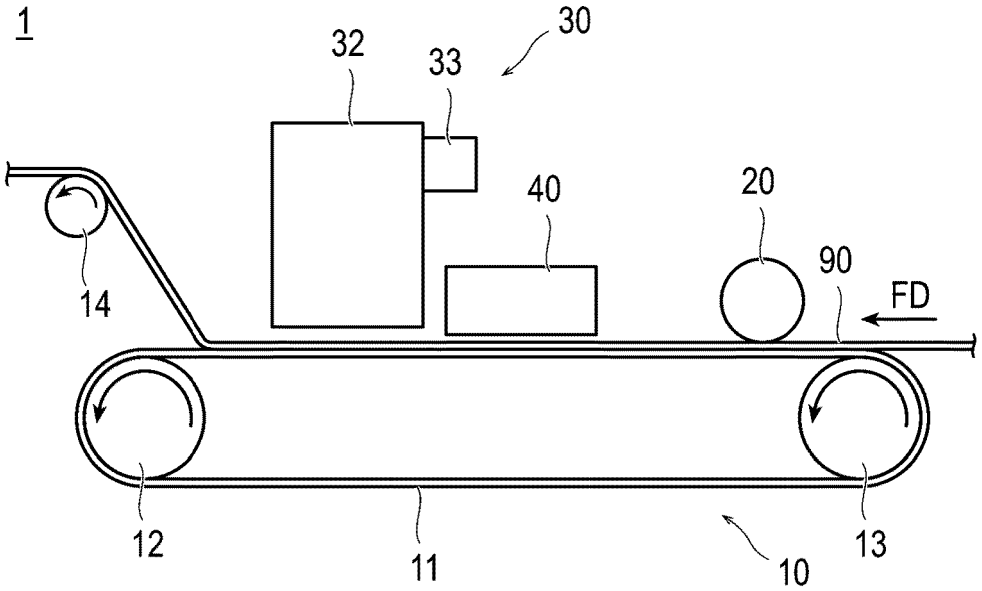
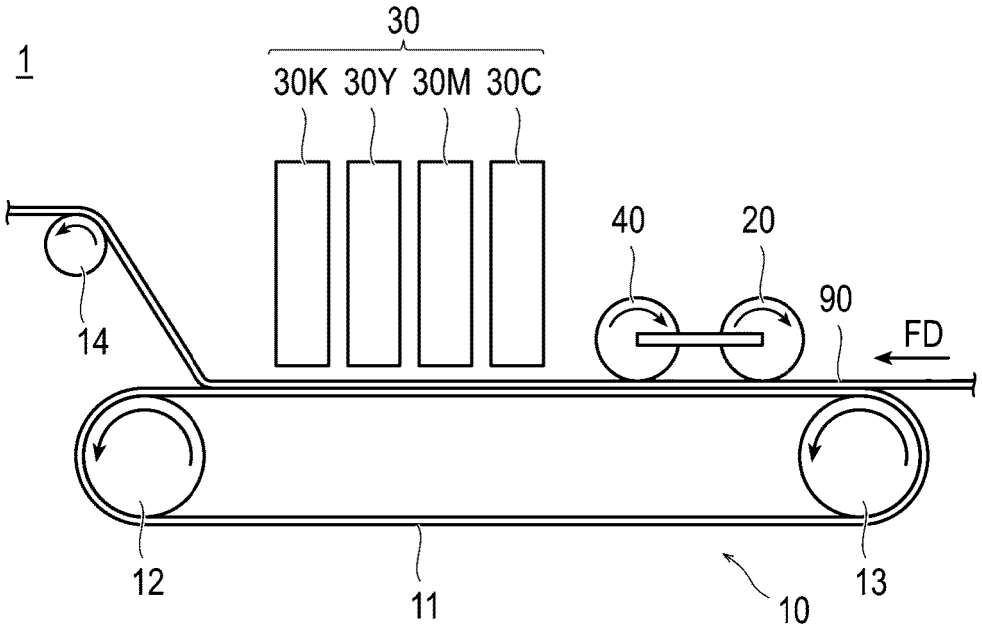

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FIG. 10


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EUROPEAN SEARCH REPORT

Application Number
EP 26 15 6767

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X	US 2022/153039 A1 (HORIE SEIJUN [JP] ET AL) 19 May 2022 (2022-05-19)	1-3	INV. B41J3/407
A	* paragraphs [0060], [0068]; figure 1 *	4-10	B41J15/04 B41J29/17
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B41J

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	9 July 2026	Loi, Alberto

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