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(72) Inventors:
• **VERHOEVEN, Erik P.J.**
Venlo (NL)
• **HAAN, Harm R.**
Venlo (NL)

(74) Representative: **Canon Production Printing IP**
Department
Canon Production Printing Netherlands B.V.
Van der Grintenstraat 10
5914 HH Venlo (NL)

(71) Applicant: **Canon Production Printing Holding**
B.V.
5914 HH Venlo (NL)

(54) **INKJET IMAGING DEVICE, AND METHOD FOR DETERMINING WHETHER PRINT MEDIA IS SUITABLE FOR PRINTING**

(57) The invention provides an inkjet imaging device (100), comprising at least one input device (1) configured to provide print media (PM). The inkjet imaging device further comprises a transport mechanism (12) for transporting the provided print media. A sensor device (3) of the inkjet imaging device is configured to acquire sensor data related to a geometry or quality of the print media provided by the at least one input device. Further, the inkjet imaging device comprises an inkjet marking module (4) configured to, in a print mode, eject ink to the print media provided by the at least one input device. A print

gap between at least one print head of the inkjet marking module and the transport mechanism is adjustable. The inkjet imaging device further comprises a controller (9). In a preprint check mode, the controller controls the inkjet marking module to increase the print gap above a print gap used in the print mode and to convey the print media through the inkjet marking module without ejecting ink to the print media. The controller further determines, based on the sensor data acquired by the sensor device, whether the print media is suitable for printing.

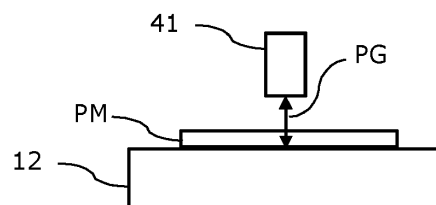


Fig. 2

Description

FIELD OF THE INVENTION

[0001] The present invention relates to an inkjet imaging device, and to a method for determining whether print media is suitable for printing.

BACKGROUND ART

[0002] Inkjet imaging devices may comprise a duplex loop for printing on both sides of print media. From US 2010/0110483 A1, a method for printing a large volume of print data is known which is optimized for printing simplex sheets in between duplex jobs.

[0003] In inkjet imaging devices, there is a print gap between the print head of the inkjet imaging device and a transport mechanism that transports the print media under the print head. To maintain high print quality in the inkjet imaging device, the print gap must be maintained at a small distance. Because of the small distance, however, unsuitable print media may touch the print head. In this event, degradation of the print quality, contamination of the inkjet imaging device, a paper jam in the inkjet imaging device, nozzle failure or even damages to the print head may result. Therefore, it is important to avoid the usage of unsuitable print media.

[0004] In fact, even small defects or deformations of the print media, like dog ears or wrinkles, may render the print media unsuitable for printing. Further problems may occur if the type of the print media does not comply with the settings of the inkjet imaging device. For instance, the print media may have a height which is larger than the print gap set by the inkjet imaging device. Therefore, a head touch may occur, i.e. the print media may contact the print head.

[0005] Accordingly, efforts have been made to detect whether the print media is suitable for printing. A height sensor for detecting sheets that may exceed a maximum height is known from US 9519447 B2.

[0006] A further method for defect detection in a printing system is known from EP 3204230 A1. Herein, a sensing unit senses a surface geometry or topology of a sheet to be printed. A processor device detects and classifies deformations of the geometry or topology of the sheet. Processing the sheet along the transport path of the printing system is controlled based on detected and classified deformations of the surface geometry or topology. If defects of the sheet are detected, an automated ejector device may remove the sheet from the transport path before it is printed.

[0007] Thus, it is possible to avoid degradation of the print quality, paper jams in the inkjet imaging device, and the like, by sorting out unsuitable print media even before the print media can reach the print head.

[0008] However, sorting out the unsuitable print media in advance requires an error bin directly after the sensing unit and before the print heads. Generally, accurate sheet

height measurement should be done above a belt for transporting the print media. Thus, a longer print belt or more belts (e.g. a sentry belt, and a print belt) are required which increases the complexity and space requirement of the inkjet imaging device. (At the latest a decision to reject a defective sheet may occur when scanning close to the trailing edge of the media resulting in the distance between sensing unit and an ejector device to be at minimum the maximum supported media length.)

[0009] Therefore, there is a need to provide a compact inkjet imaging device which reliably identifies unsuitable print media.

SUMMARY OF THE INVENTION

[0010] It is one of the objects of the present invention to provide an inkjet imaging device which can identify unsuitable print media but does not rely on additional means to remove unsuitable print media prior to providing the print media to the inkjet marking module.

[0011] This object is achieved by an inkjet imaging device and a method for determining whether print media is suitable for printing, as recited in the independent claims.

[0012] Further variants and additional modifications will be apparent from the subject-matter of the dependent claims as well as from the description and the corresponding figures.

[0013] According to a first aspect, the invention provides an inkjet imaging device, comprising at least one input device configured to provide print media. The inkjet imaging device further comprises a transport mechanism for transporting the provided print media. A sensor device of the inkjet imaging device is configured to acquire sensor data related to a geometry or quality of the print media provided by the at least one input device. Further, the inkjet imaging device comprises an inkjet marking module configured to, in a print mode, eject ink to the print media provided by the at least one input device. A print gap between at least one print head of the inkjet marking module and the transport mechanism is adjustable. The inkjet imaging device further comprises a controller. In a preprint check mode, the controller controls the inkjet marking module to increase the print gap above a print gap used in the print mode and to convey the print media through the inkjet marking module without ejecting ink to the print media. The controller further determines, based on the sensor data acquired by the sensor device, whether the print media is suitable for printing.

[0014] According to the second aspect, the invention provides a method for determining whether print media is suitable for printing in an inkjet imaging device. At least one input device of an inkjet imaging device provides print media. A print gap between at least one print head of an inkjet marking module of the inkjet imaging device and a transport mechanism for transporting the provided print media is increased above a print gap used in a print mode. A sensor device of the inkjet imaging device ac-

quires sensor data related to a geometry or quality of the provided print media. The print media is conveyed through the inkjet marking module without ejecting ink to the print media. Based on the acquired sensor data, it is determined whether the print media is suitable for printing.

[0015] According to a third aspect, the invention provides a computer program product comprising executable program code configured to, when executed by a computing device, perform the inventive method for determining whether print media is suitable for printing in an inkjet imaging device.

[0016] According to a fourth aspect, the invention provides a non-transitory, computer-readable storage medium comprising executable program code configured to, when executed by a computing device, perform the inventive method for determining whether print media is suitable for printing in an inkjet imaging device.

[0017] An underlying idea of the present invention is to increase the print gap (relative to a print gap necessary for normal print quality) without printing on print media if it is not yet clear that the print media is suitable for printing. Thus, possible damages to the print heads of the inkjet marking module can be avoided. Additionally, there is only a small impact on the productivity.

[0018] Only if it is detected that the print media is suitable for printing, the inkjet marking module starts operating in the print mode. Moreover, there is no need to sort out print media with defects already before the print media is conveyed through the inkjet marking module. Therefore, additional components to remove unsuitable print media upstream of the inkjet marking module are not necessary.

[0019] By reducing the amount of print head touches during printing, the amount of paper jams in the print gap can be reduced. Further, the risk of broken print heads due to paper touches is reduced. Also, the risk of primer (and ink) smearing resulting in permanent nozzle failures is reduced.

[0020] Another advantage is that a user can insert low quality sheets without having to worry for engine failure.

[0021] Yet another advantage of determining whether print media is suitable for printing is the possibility to verify second pass sheets without printing on them. This results in reduced ink usage and waste sheets.

[0022] According to the invention, a "geometry" of the print media may refer to a thickness of the print media.

[0023] According to the invention, the "print media" may comprise sheets of paper, possibly pre-printed on at least one side.

[0024] According to the invention, a "quality of the print media" may relate to the presence or absence of small defects or deformations of the print media, e.g. dog ears or wrinkles.

[0025] According to the invention, a "print gap" may refer to the distance between a print head of the inkjet marking module and the transport mechanism.

[0026] According to the invention, a "transport mechanism" may comprise belts and/or rollers for transporting the print media.

[0027] According to the invention, "print media suitable for printing" may relate to print media of the correct quality and geometry without any damage or defects that can pass under the print head without touching.

[0028] According to a further embodiment, the inkjet imaging device further comprises a removal device (e.g. an output tray or some error bin) for removing print media after being conveyed through the inkjet marking module. In the preprint check mode, the controller controls the removal device to remove the print media, if the controller determines that the print media is not suitable for printing. Thus, unsuitable print media is automatically removed from the media schedule.

[0029] According to a further embodiment of the inkjet imaging device, the controller controls the inkjet marking module to switch to a print mode, if the controller determines that the print media is suitable for printing. Therefore, printing can commence immediately after it is determined that the print media has been checked.

[0030] According to a further embodiment the inkjet imaging device further comprises a duplex path, wherein, in the preprint check mode, the controller is configured to control the inkjet imaging device to circulate the print media through the duplex path. Therefore, a preprint check may comprise pre-circulation of potentially damaged or deformed print media through the duplex loop before the actual printing process is carried out. Thus, damage to the print head of the inkjet marking module may be avoided. At the same time no sheets are wasted because sheets suitable for printing may be used after circulating through the duplex path.

[0031] In an alternative embodiment, the print media determined to be suitable for printing are also removed by a removal device. Or in again another alternative embodiment, after a sufficient amount of print media have been determined to be suitable for printing, the transport direction of the transport mechanism is reversed to move the print media back to a position before the print head to allow printing on the print media.

[0032] According to a further embodiment of the inkjet imaging device, the controller controls the inkjet imaging device to circulate the print media through the duplex path only if the controller determines that the print media is suitable for printing.

[0033] According to a further embodiment of the inkjet imaging device, if the controller determines that the print media is suitable for printing, the controller is configured to control the inkjet imaging device to switch to the print mode after the print media is conveyed through the inkjet marking module with an increased print gap and before the print media is again provided via the duplex path to the inkjet marking module. Therefore, suitable print media is not removed but can be used after circulating through the duplex path.

[0034] According to a further embodiment, the inkjet imaging device further comprises a turning device ar-

ranged in the duplex path and configured to invert an orientation of the print media with respect to the inkjet marking module, wherein, in the preprint check mode, the print media bypasses the turning device such that the orientation of the print media with respect to the inkjet marking module does not change after circulating through the duplex path. Bypassing the turning station has the effect that the print media is inserted again in the same orientation into the inkjet marking module. This is particularly helpful for "oriented" print media having two different sides, e.g. print media which is pre-printed on one side.

[0035] According to a further embodiment, in the preprint check mode, the print media does not bypass the turning device but is rather processed by the turning device. The inkjet marking module prints on the print media after two loops in the duplex path. After two loops the sheet has again the same orientation as before.

[0036] According to a further embodiment of the inkjet imaging device, the controller initiates the preprint check mode when the controller detects that new print media has been loaded to the at least one input device. In this case, it may not be guaranteed that the print media is suitable for printing.

[0037] According to a further embodiment of the inkjet imaging device, the controller initiates the preprint check mode when the controller detects that a print job to be printed requires print media loaded in the at least one input device, which print media has not been used for an extended amount of time exceeding a predetermined threshold.

[0038] According to a further embodiment of the inkjet imaging device, the controller initiates the preprint check mode when the controller detects that a media type of the print media is unknown.

[0039] According to a further embodiment of the inkjet imaging device, the controller initiates the preprint check mode when the controller detects that the inkjet imaging device has been shut down or idle for at least a predetermined time or an undetermined amount of time. That is, inserted sheets can be identified as being a candidate for having a deformation when an engine or paper tray has not been used for an extended amount of time, for example, at the first run in the morning or when a new stack is inserted after an extended amount of time.

[0040] According to a further embodiment of the inkjet imaging device, the controller initiates the preprint check mode when the controller detects that a printing error has been detected in a previous run.

[0041] According to a further embodiment of the inkjet imaging device, the sensor device is located downstream of the at least one input device and upstream of the inkjet marking module.

[0042] According to a further embodiment of the inkjet imaging device, the sensor device is configured to determine a height of the print media. The height of the print media is an indication whether the print media is suitable for printing.

[0043] According to a further embodiment of the inkjet imaging device, the sensor device comprises at least one of a piezoelectric sensor, a photo-electric sensor, a light curtain, and a height detection camera.

[0044] According to a further embodiment of the inkjet imaging device, the sensor device comprises a touch sensor configured to sense whether the print media touches the touch sensor, and wherein the controller is configured to determine that the print media is suitable for printing if the print media does not touch the touch device.

BRIEF DESCRIPTION OF THE DRAWINGS

[0045] The present invention will become more fully understood from the detailed description given hereinbelow and the accompanying schematic drawings which are given by way of illustration only, and thus are not limitative of the present invention, and wherein:

Fig. 1 shows a schematic block diagram of an inkjet imaging device according to an embodiment of the invention;

Fig. 2 shows a schematic illustration of a print gap between a print head and a transport mechanism;

Fig. 3 shows a flow diagram of a method for determining whether print media is suitable for printing in an inkjet imaging device according to an embodiment of the invention;

Fig. 4 schematically illustrates a block diagram illustrating a computer program product according to an embodiment of the invention; and

Fig. 5 schematically illustrates a block diagram illustrating a non-transitory, computer-readable storage medium according to an embodiment of the invention.

DETAILED DESCRIPTION OF THE DRAWINGS

[0046] The present invention will now be described with reference to the accompanying drawings.

[0047] Figure 1 shows a schematic block diagram of an inkjet imaging device 100, having at least one paper input module, PIM, 1, which is an input device according to the invention. Each input device 1 may comprise a plurality of trays, storing (possibly different) print media (e.g. sheets of paper). The input device 1 provides the print media and a driven belt system having one or more endless belt (which is a transport mechanism according to the invention) transports the print media through the inkjet imaging device 100. Alternatively or additionally, the transport mechanism may comprise one or more drums, rollers or pinches.

[0048] The print media is provided to a pre-treatment

device 2 which may perform pre-heating of the print media and/or a primer pre-treatment for increasing a surface tension of the print media. The pre-treatment device 2 is optional and may be absent in further embodiments of the invention.

[0049] The inkjet imaging device further comprises a sensor device 3 which acquires sensor data related to the geometry and/or quality of the print media provided by the input device number 1. The sensor device 3 comprises a piezoelectric sensor and/or a photoelectric sensor and may determine a height of the print media. The sensor device 3 may also comprise a touch sensor which can sense whether the print media touches the touch sensor. For example, if the print media has defects such as wrinkles and the like (i.e. is of bad quality), the print media may touch the touch sensor. The touch sensor will then provide a sensor signal indicating the touching event. According to further embodiments, the sensor device may provide a sensor signal indicating or related to a height of the print media passing below the sensor device 3.

[0050] According to further embodiments, the sensor device 3 may be located between the input device 1 and the pre-treatment device 2, i.e. upstream of the pre-treatment device 2.

[0051] The sensor signal generated by the sensor device 3 is provided to a controller 9 of the inkjet imaging device 100. The controller 9 may comprise computing means, such as microcontrollers, application specific integrated circuits (ASICs), field programmable gate arrays (FPGAs), microprocessors and the like. The controller 9 may also comprise at least one memory for storing received data, such as the sensor signals.

[0052] Downstream of the sensor device 3, there is an inkjet marking module 4 comprising at least one print head which is adapted for ejecting ink to the print media provided by the input device 1. A print gap is defined between the print head of the inkjet marking module 4 and the transport mechanism transporting the print media. The controller 9 is adapted to adjust the print gap.

[0053] The controller 9 can switch between a print mode and a preprint check mode. In the print mode, the print gap is set to a first value (which can depend on the specifications of the print media, e.g. a thickness of the print media). In the preprint check mode, the print gap is set to a second value which is larger than the first value. For example, the print gap may be increased to a maximally possible value.

[0054] Further, in the print mode, the inkjet marking module 4 is adapted to eject ink to the print media. In the preprint check mode, the inkjet marking module 4 does not eject ink to the print media.

[0055] For determining whether the inkjet marking module 4 operates in the print mode or in the preprint check mode, the controller 9 can evaluate data received from the input device 1. Based on this data, the controller 9 may determine whether new print media has been loaded to the at least one input device 1 or whether a media

type of the print media is unknown. In these cases, the controller 9 may operate the inkjet marking module 4 in the preprint check mode.

[0056] Further, the controller 9 may determine whether the inkjet imaging device has been shut down or has been idle for at least a predetermined time, an undetermined amount of time, and/or whether a printing error has been detected in a previous run. In these cases, the controller 9 may also operate the inkjet marking module 4 in the preprint check mode.

[0057] In the preprint check mode, the controller 9 is adapted to evaluate the data received from the sensor device 3. If the controller 9 receives a sensor signal which indicates that the print media has touched the touch sensor of the sensor device 3 or a sensor signal which indicates that a height of the print media is larger than a predetermined threshold, the controller 9 will determine that the print media is not suitable for printing.

[0058] In contrast, if the controller 9 determines based on the sensor signal that the print media has not touched the touch sensor of the sensor device 3 or that a height of the print media does not exceed a predetermined threshold, the controller 9 will determine that the print media is suitable for printing.

[0059] The inkjet imaging device 100 further comprises a removal device 10 which is arranged downstream of the inkjet marking module 4 and may comprise rollers and/or belts and an output tray. If the controller 9 determines that the print media is not suitable for printing, the print media will be transferred to the output tray of the removal device 10. The removal device 10 is optional and inkjet imaging devices according to further embodiments may not comprise a removal device 10.

[0060] Moreover, the inkjet device 100 comprises a duplex path 8 with a turning device 11 arranged in the duplex path 8, configured to invert the orientation of the print media. In the print mode, the turning device inverts the orientation of the print media such that the inkjet marking module 4 can print on both sides of the print media.

[0061] In the preprint check mode, print media is directed through the duplex path 8 but does not pass through the turning device 11 (dotted line) but bypasses the turning device 11.

[0062] The controller 9 can be configured to circulate the print media through the duplex path 8 only if the controller 9 determines that the print media is suitable for printing. During the time that the print media circulates through the duplex path 8, the print controller 9 can control the inkjet marking module 4 to switch to the print mode. That is, the print gap is reduced to a size suitable for printing. When the print media arrives again at the inkjet marking module 4 after circulating through the duplex path 8, the inkjet marking module 4 ejects ink to the print media. In case of a duplex job, the print media is again circulating through the duplex path 8, this time being directed through the turning device 11 (i.e. not bypassing the turning device 11).

[0063] If the controller 9 determines that the print media

is not suitable for printing, the print media is not directed through the duplex path 8, but rather sent to the removal device 10 for removing the print media.

[0064] After the inkjet marking module 4 ejects ink to the print media, optional post-treatment devices 5 may apply post-treatment, such as at least one of drying, fixing, laminating, liquid application and the like. The print media PM is then stored in a stack 6.

[0065] Figure 2 shows a schematic illustration of a print gap PG between a print head 41 (or the nozzle plate thereof) of the inkjet marking module 4 and a transport mechanism 12. The transport mechanism 12 may comprise a roller or a belt. As shown in figure 2, in the preprint check mode, the print gap PG is set to a value which is considerably larger than a distance between the print head 41 and the print media PM located on the transport mechanism 12. Therefore, print head touches can be avoided.

[0066] Note that the term print gap is commonly used for the distance between (the nozzle plate of) the print head 41 and the print media PM. In that case the distance between the print head 41 and the transport mechanism 12 is typically referred to with the more generic term "gap". One of the use cases to apply the present invention in is when there is reason to believe that the print media PM being fed from the input device may not be what is expected, for example an incorrect media loaded or an incorrect identification of the loaded media. In such cases the media thickness may differ from what the controller expects which may lead to a head collision. In such cases a distance between the print head 41 and the print media PM may be ambiguous until a sensor device 3 actually detects a thickness or an imminent head collision. Therefore, in this document the distance between (the nozzle plate of) the print head 41 and the transport mechanism 12 is used in the references. However, the actual metric chosen to express a "print head height" is a matter of definition, the idea of the invention being that the print head 41 is positioned such that the risk of a head collision is reduced by increasing the distance to the print media PM and making the print media PM pass the sensor device 3 to determine whether a head collision would have occurred if printing on it was attempted.

[0067] Figure 3 shows a flow diagram of a method for determining whether print media PM is suitable for printing in an inkjet imaging device 100. The method can be carried out by the inkjet imaging device 100 described. In turn, the inkjet imaging device 100 described above can be configured to carry out the method for determining whether print media PM is suitable for printing described in the following.

[0068] In a first step S1, at least one input device 1 of the inkjet imaging device 100 provides print media, e.g. sheets of paper.

[0069] In a second step S2, a controller 9 of the inkjet imaging device 100 determines whether there is a chance or likelihood that the print media PM provided by the input device 1 is unsuitable for printing. The controller

9 may check at least one of the following conditions:

- new print media PM has been loaded to the at least one input device 1;
- a media type of the print media PM is unknown;
- the inkjet imaging device 100 has been shut down or idle for at least a predetermined time;
- a print job to be printed requires print media loaded in the at least one input device, which print media has not been used for an extended amount of time exceeding a predetermined threshold; and
- a printing error has been detected in a previous run.

If none of the above conditions applies, the controller 9 will operate the inkjet imaging device 100 in a print mode, S3. The print gap PG of the inkjet marking module 4 is set to a value suitable for printing.

[0070] However, if any of the above conditions applies, the controller 9 will operate the inkjet imaging device 100 in a preprint check mode, S4, and will increase the print gap PG between the print head 41 of the inkjet marking module 4 of the inkjet imaging device 100 and a transport mechanism 12 for transporting the provided print media PM to a value which is higher than the value of the print gap PG used in the print mode.

[0071] Moreover, a sensor device 3 of the inkjet imaging device 100 is arranged between the input device 1 of the inkjet imaging device 100 and the inkjet marking module 4. The sensor device 3 acquires sensor data related to a geometry or quality of the provided print media, S5. The sensor device 3 may determine whether the print media PM touches a touch sensor of the sensor device 3. The sensor device 3 may also comprise a piezoelectric sensor and/or photoelectric sensor for determining a distance to the print media PM which corresponds to a thickness of the print media PM.

[0072] In step S6, the print media PM is conveyed through the inkjet marking module 4 with increased print gap PG and without ejecting ink to the print media PM.

[0073] In step S7, the controller 9 determines whether the print media PM is suitable for printing. For example, if the print media PM does not touch the touch device of the sensor device 3 or if a thickness of the print media PM is smaller than a predetermined threshold, the controller 9 determines that the print media PM is suitable for printing. In this case, the print media PM is circulated through a duplex path 8, S8. the print media PM bypasses a turning device 11 of the duplex path 8 such that the orientation of the print media PM with respect to the inkjet marking module 4 does not change after circulating through the duplex path 8. The inkjet imaging device 100 is then operated in the normal print mode, S3.

[0074] If the controller 9 determines that the print media PM is not suitable for printing, the print media PM is removed with the help of a removal device 10 of the inkjet imaging device 100, S9.

[0075] Figure 4 schematically illustrates a block diagram illustrating a computer program product P compris-

ing executable program code PC. The executable program code PC is configured to perform, when executed, e.g. by a computing device (e.g. the controller 9), the method for determining whether print media is suitable for printing in an inkjet imaging device 100 according to the invention.

[0076] Figure 5 schematically illustrates a block diagram illustrating a non-transitory, computer-readable storage medium M comprising executable program code MC configured to, when executed, e.g. by a computing device (e.g. the controller 9), perform the method for determining whether print media is suitable for printing in an inkjet imaging device 100 according to the invention.

Claims

1. An inkjet imaging device (100), comprising:

at least one input device (1) configured to provide print media (PM);
 a transport mechanism (12) for transporting the provided print media (PM);
 a sensor device (3), configured to acquire sensor data related to a geometry or quality of the print media (PM) provided by the at least one input device (1);
 an inkjet marking module (4) configured to, in a print mode, eject ink to the print media (PM) provided by the at least one input device (1), wherein a print gap (PG) between at least one print head (41) of the inkjet marking module (4) and the transport mechanism (12) is adjustable; and
 a controller (9), wherein, in a preprint check mode, the controller (9) is configured to:

- control the inkjet marking module (4) to increase the print gap (PG) above a print gap (PG) used in the print mode and to convey the print media (PM) through the inkjet marking module (4) without ejecting ink to the print media (PM), and
- determine, based on the sensor data acquired by the sensor device (3), whether the print media (PM) is suitable for printing.

2. The inkjet imaging device (100) according to claim 1, further comprising a removal device (10) for removing print media (PM) after being conveyed through the inkjet marking module (4), wherein, in the preprint check mode, the controller (9) is further configured to control the removal device (10) to remove the print media (PM), if the controller (9) determines that the print media (PM) is not suitable for printing.

3. The inkjet imaging device (100) according to claim 1 or 2, wherein the controller (9) is further configured

to control the inkjet marking module (4) to switch to a print mode, if the controller (9) determines that the print media (PM) is suitable for printing.

4. The inkjet imaging device (100) according to any of the preceding claims, further comprising a duplex path (8), wherein, in the preprint check mode, the controller (9) is configured to control the inkjet imaging device (100) to circulate the print media (PM) through the duplex path (8).

5. The inkjet imaging device (100) according to claim 4, wherein the controller (9) is configured to control the inkjet imaging device (100) to circulate the print media (PM) through the duplex path (8) only if the controller (9) determines that the print media (PM) is suitable for printing.

6. The inkjet imaging device (100) according to claim 4 or 5, wherein, if the controller (9) determines that the print media (PM) is suitable for printing, the controller (9) is configured to control the inkjet imaging device (100) to switch to the print mode after the print media (PM) is conveyed through the inkjet marking module (4) with an increased print gap (PG) and before the print media (PM) is again provided via the duplex path (8) to the inkjet marking module (4).

7. The inkjet imaging device (100) according to any of claims 4 to 6, further comprising a turning device (11) arranged in the duplex path (8) and configured to invert an orientation of the print media (PM) with respect to the inkjet marking module (4), wherein, in the preprint check mode, the print media (PM) bypasses the turning device (11) such that the orientation of the print media (PM) with respect to the inkjet marking module (4) does not change after circulating through the duplex path (8).

8. The inkjet imaging device (100) according to any of the preceding claims, wherein the controller (9) is adapted to initiate the preprint check mode in the event the controller (9) detects at least one of the following conditions:

- new print media (PM) has been loaded to the at least one input device (1);
- a media type of the print media (PM) is unknown;
- the inkjet imaging device (100) has been shut down or idle for at least a predetermined time or an undetermined amount of time;
- a print job to be printed requires print media loaded in the at least one input device, which print media has not been used for an extended amount of time exceeding a predetermined threshold; and
- a printing error has been detected in a previous

run.

configured to, when executed by a computing device, perform the method according to claim 13.

9. The inkjet imaging device (100) according to any of the preceding claims, wherein the sensor device (3) is arranged downstream of the at least one input device (1) and upstream of the inkjet marking module (4). 5
10. The inkjet imaging device (100) according to any of the preceding claims, wherein the sensor device (3) is configured to determine a height of the print media (PM). 10
11. The inkjet imaging device (100) according to claim 10, wherein the sensor device (3) comprises at least one of a piezoelectric sensor, a photo-electric sensor, a light curtain, and a height detection camera. 15
12. The inkjet imaging device (100) according to any of the preceding claims, wherein the sensor device (3) comprises a touch sensor configured to sense whether the print media (PM) touches the touch sensor, and wherein the controller (9) is configured to determine that the print media (PM) is suitable for printing if the print media (PM) does not touch the touch device. 20
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13. A method for determining whether print media (PM) is suitable for printing in an inkjet imaging device (100), comprising the steps: 30
 - providing (S1), by at least one input device (1) of an inkjet imaging device (100), print media (PM);
 - increasing (S4) a print gap (PG) between at least one print head (41) of an inkjet marking module (4) of the inkjet imaging device (100) and a transport mechanism (12) for transporting the provided print media (PM) above a print gap (PG) used in a print mode; 35
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 - acquiring (S5), by a sensor device (3) of the inkjet imaging device (100), sensor data related to a geometry or quality of the provided print media (PM);
 - conveying (S6) the print media (PM) through the inkjet marking module (4) without ejecting ink to the print media (PM), and 45
 - determining (S7), based on the acquired sensor data, whether the print media (PM) is suitable for printing. 50
14. A computer program product (P) comprising executable program code (PC) configured to, when executed by a computing device, perform the method according to claim 13. 55
15. A non-transitory, computer-readable storage medium (M) comprising executable program code (MC)

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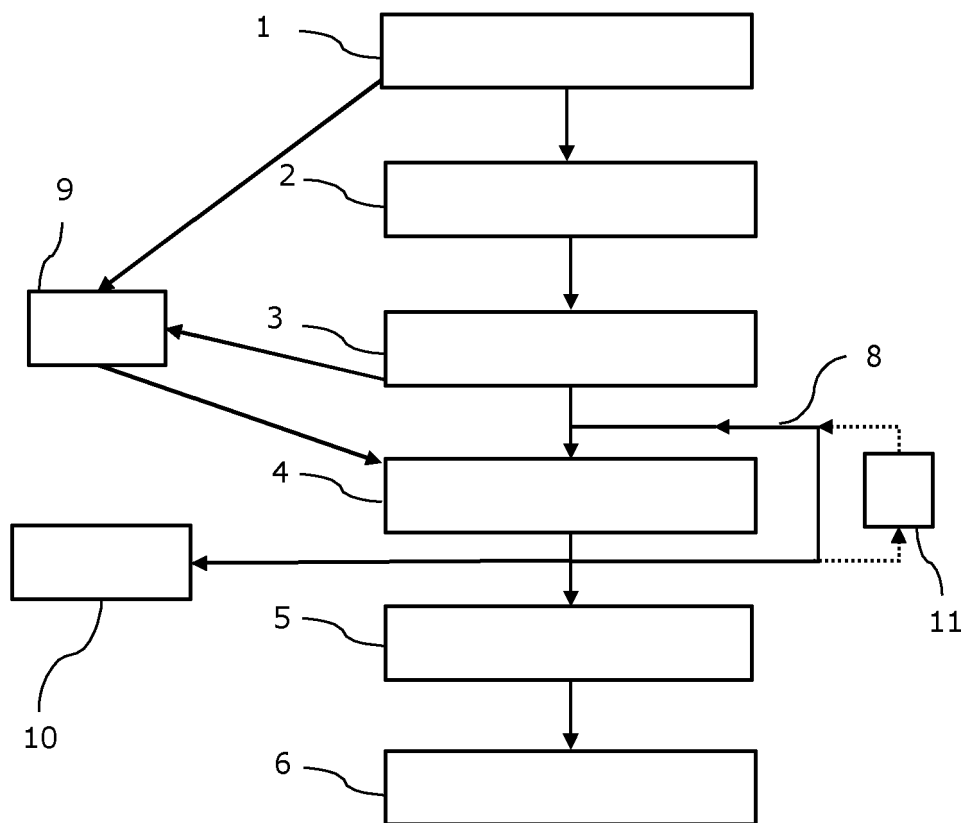


Fig. 1

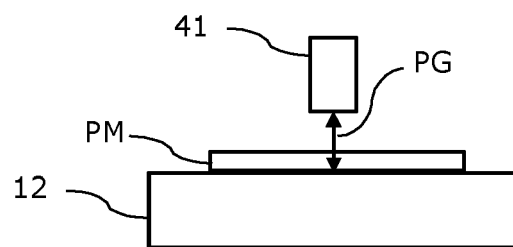


Fig. 2

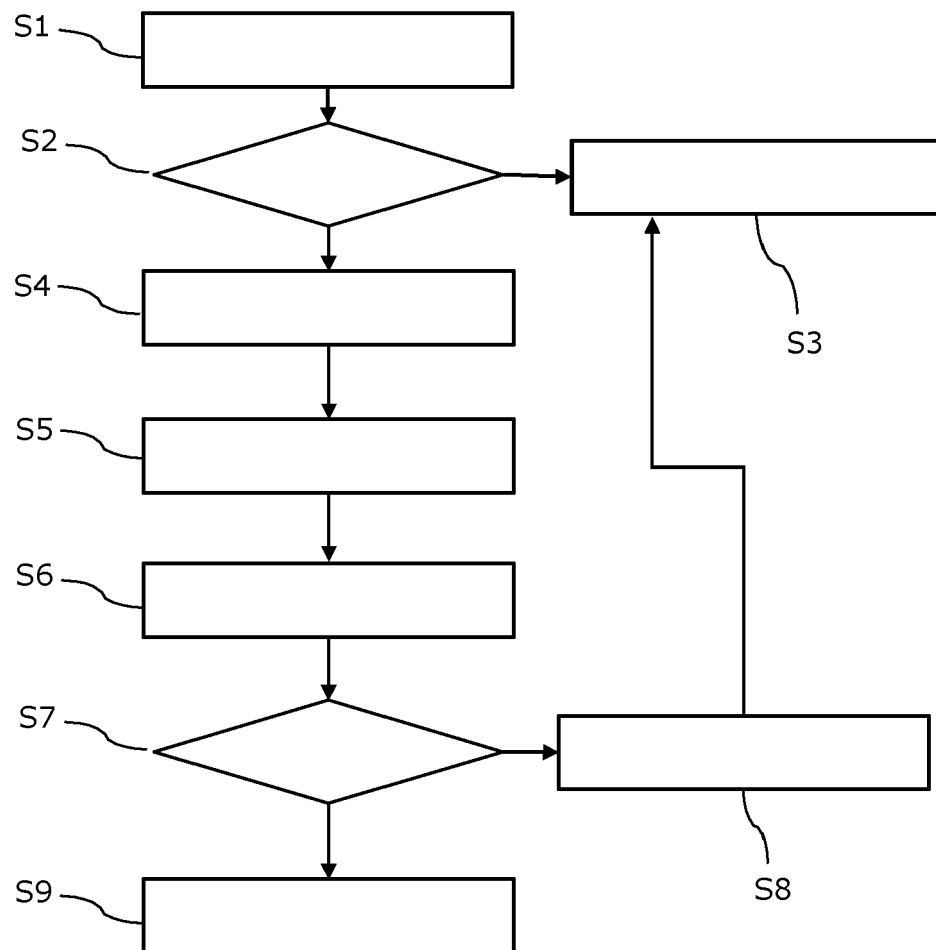


Fig. 3

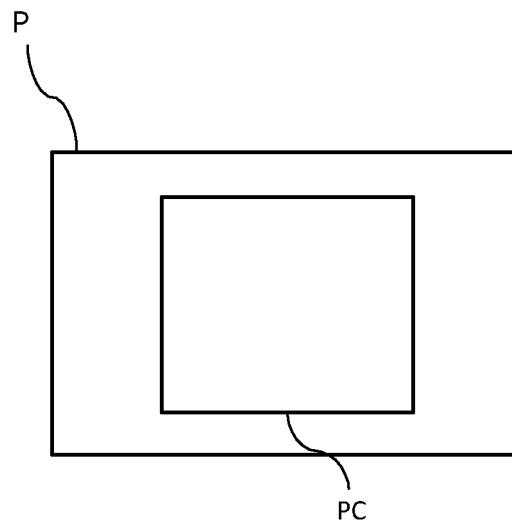


Fig. 4

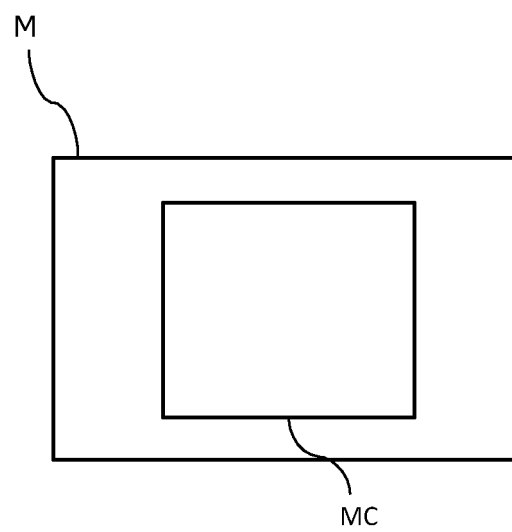


Fig. 5



EUROPEAN SEARCH REPORT

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Place of search The Hague		Date of completion of the search 25 May 2021	Examiner João, César
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**ANNEX TO THE EUROPEAN SEARCH REPORT
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5 This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
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25-05-2021

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