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Nakata et al.

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(45) **Date of Patent: Aug. 12, 2025**

(54) **RECORDING APPARATUS**

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(30) **Foreign Application Priority Data**

Mar. 17, 2022 (JP) 2022-042271

(51) **Int. Cl.**
B41J 29/02 (2006.01)
B41J 29/13 (2006.01)
B41J 2/175 (2006.01)

(52) **U.S. Cl.**
CPC ***B41J 29/02*** (2013.01); ***B41J 29/13*** (2013.01); *B41J 2002/17573* (2013.01)

(58) **Field of Classification Search**
CPC ... B41J 29/02; B41J 29/13; B41J 2002/17573
See application file for complete search history.

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(74) *Attorney, Agent, or Firm* — WORKMAN NYDEGGER

(57) **ABSTRACT**

A recording apparatus includes: a recording portion that performs recording by ejecting a liquid onto a medium; a liquid accommodation portion that accommodates the liquid to be ejected by the recording portion; and a housing that includes an accommodation portion exterior that accommodates the liquid accommodation portion, wherein the liquid accommodation portion includes a viewing region configured that the liquid accommodated is viewed, the accommodation portion exterior of the housing includes a viewing portion that faces the viewing region and is configured that the liquid is viewed, and a lighting portion that takes in light from outside the housing, and an optical path through which the light taken in passes is provided between the liquid accommodation portion and the accommodation portion exterior.

14 Claims, 20 Drawing Sheets

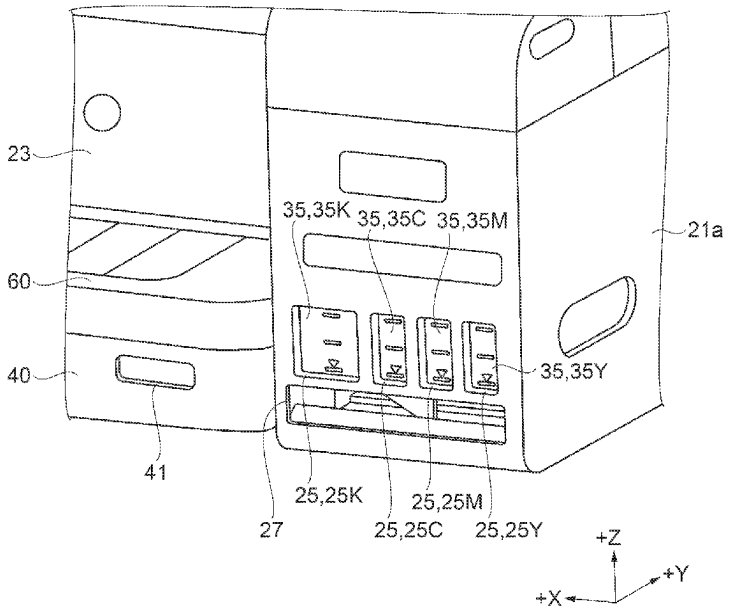


FIG. 1

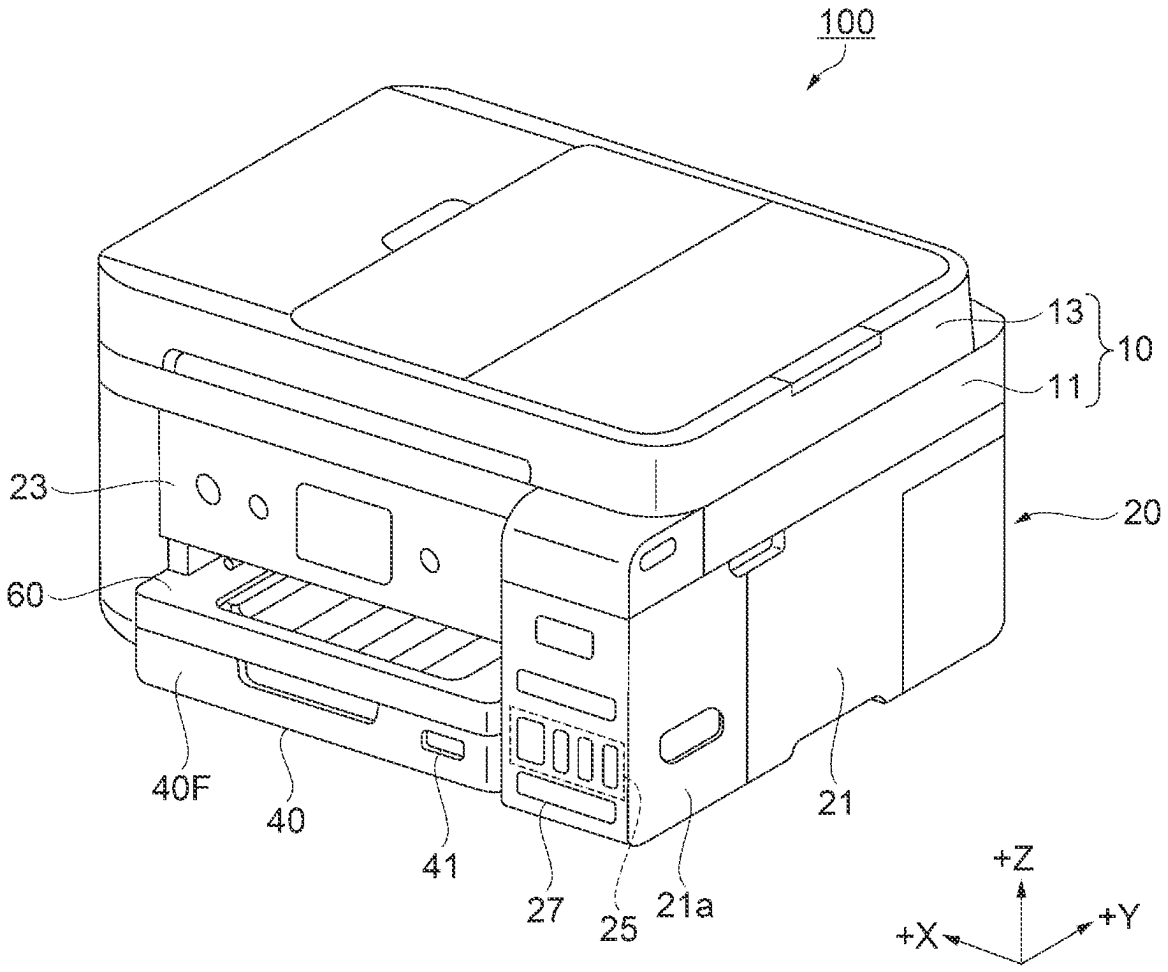


FIG. 2

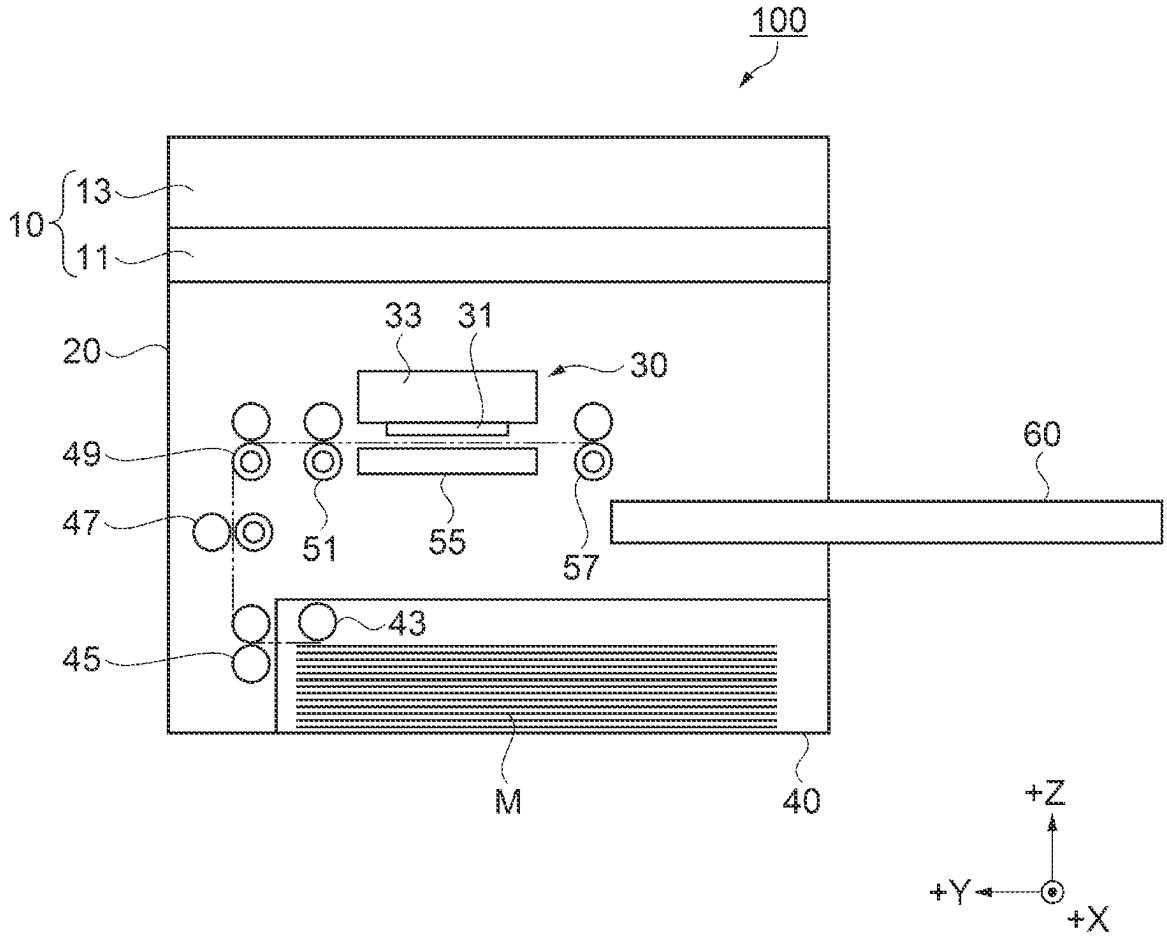
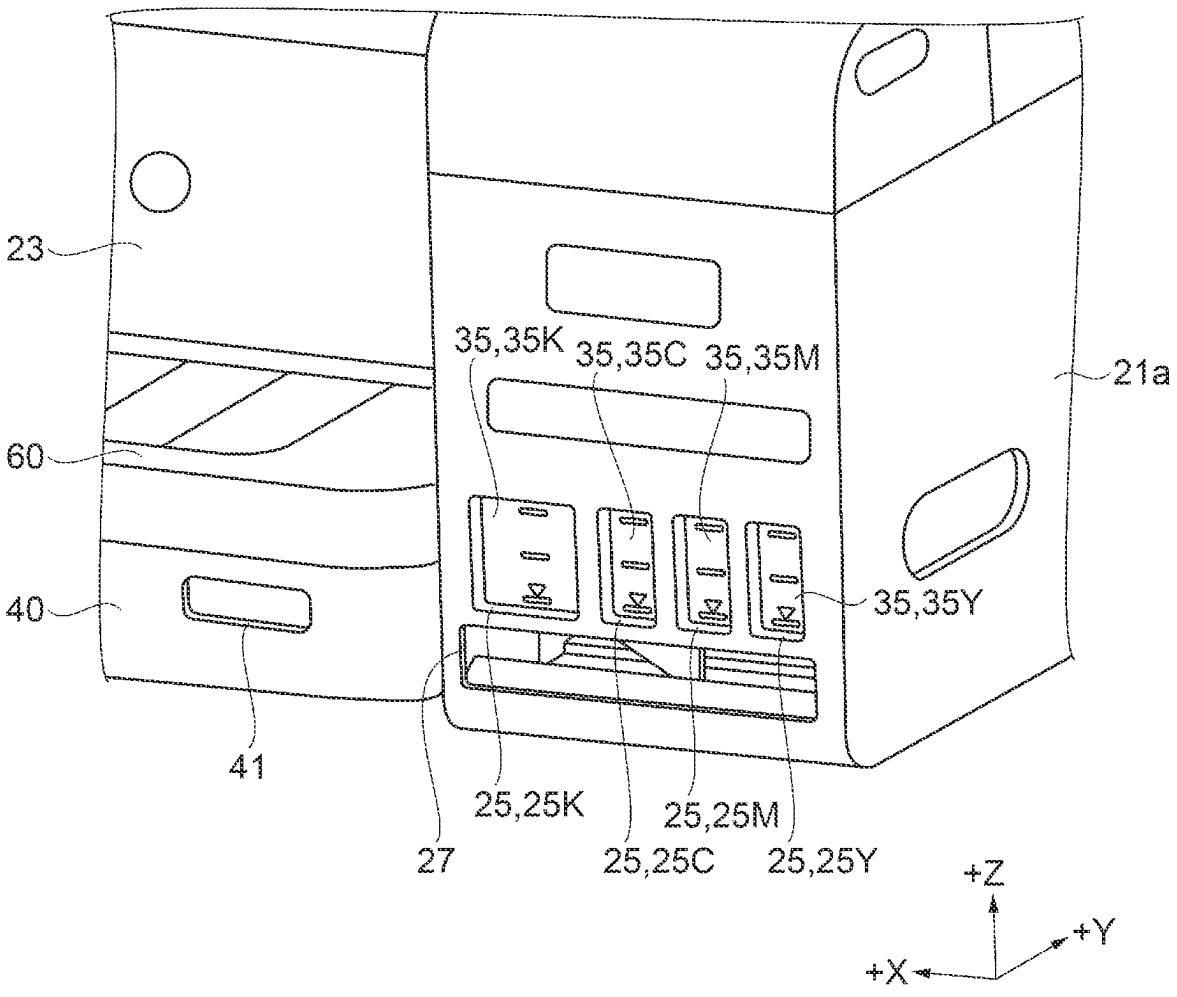


FIG. 3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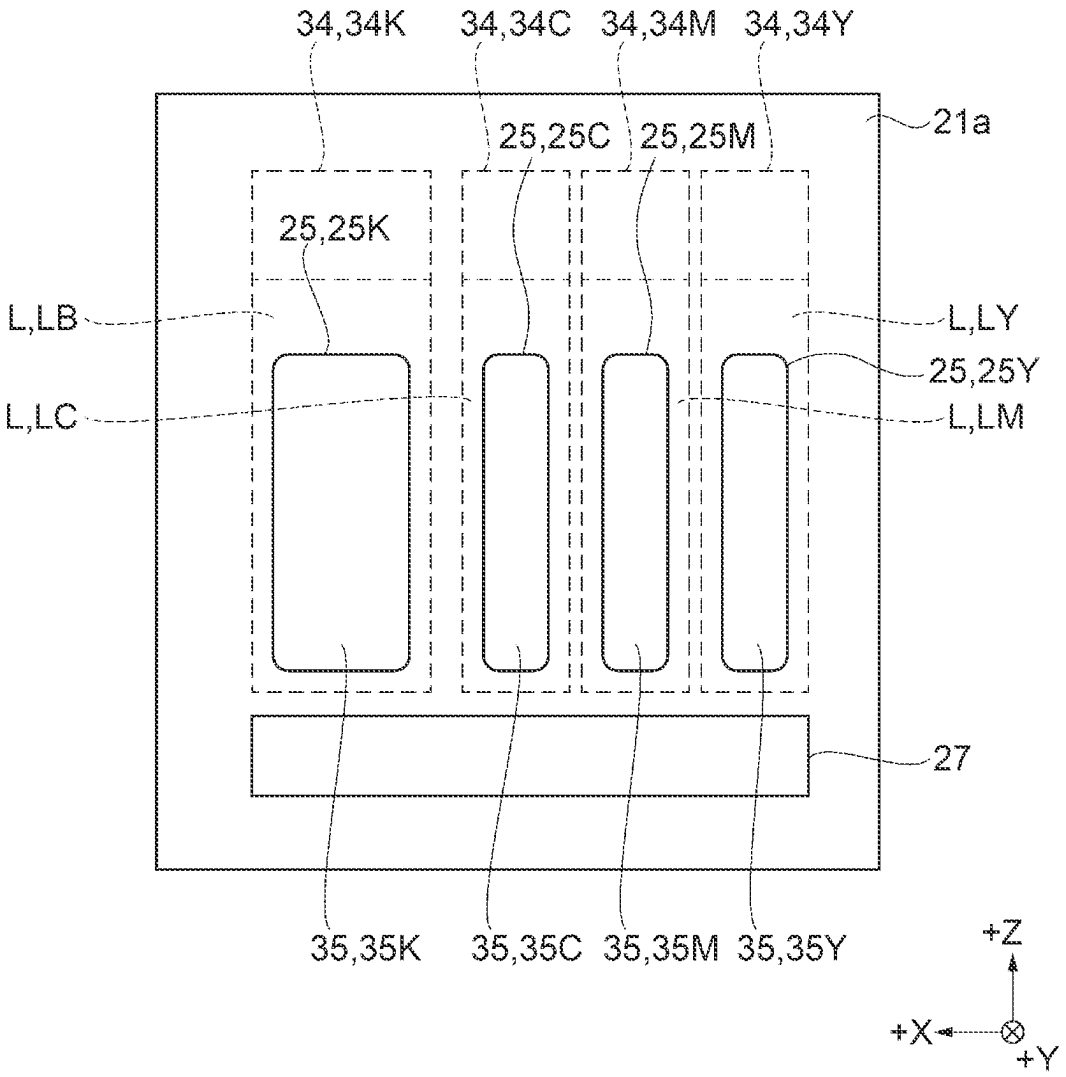
60
40
41
35,35K
35,35C
35,35M
35,35Y
21a
27
25,25K
25,25C
25,25M
25,25Y
+Z
+Y
+X

FIG. 4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34,34C
34,34M
34,34Y
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25,25C
25,25M
25,25K
L,LB
L,LY
25,25Y
L,LC
L,LM
27
35,35K
35,35C
35,35M
35,35Y
+Z
+X
+Y

FIG. 5

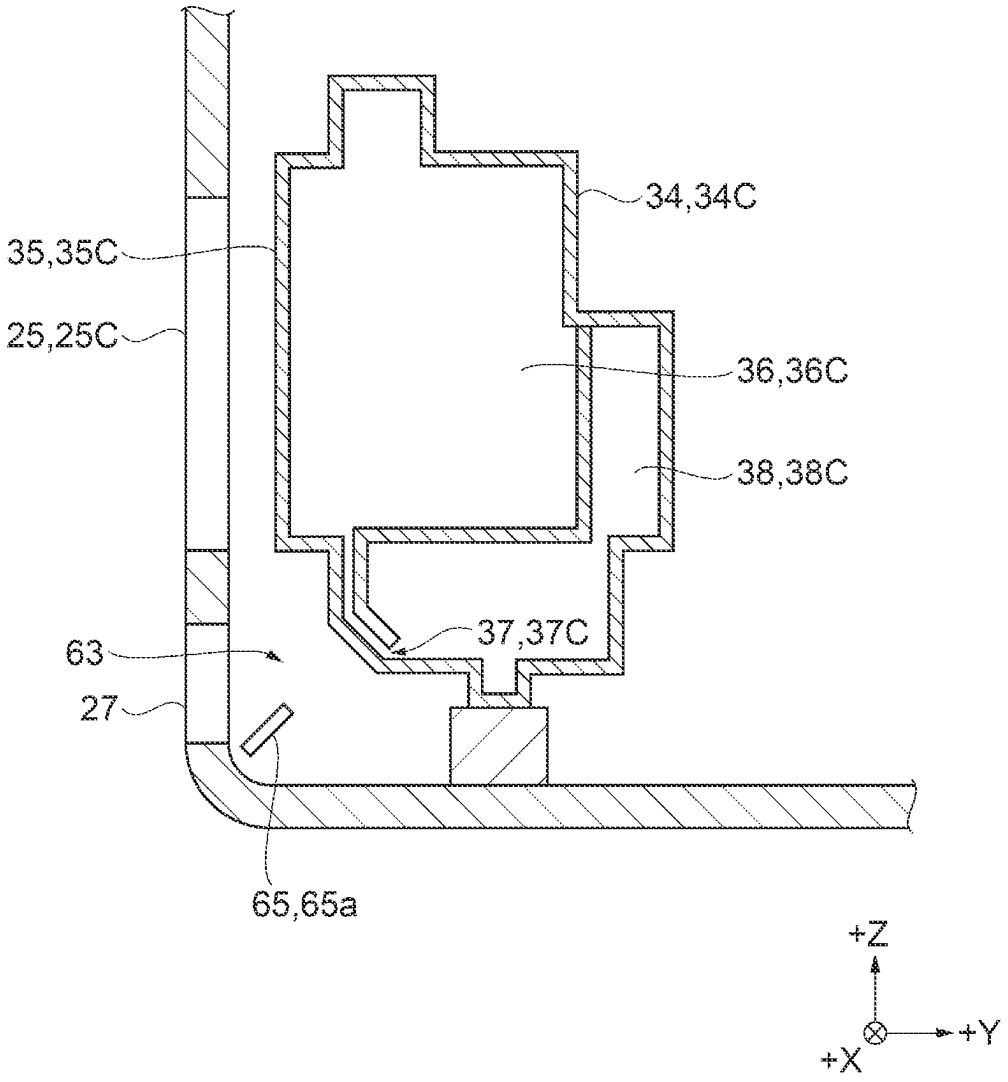
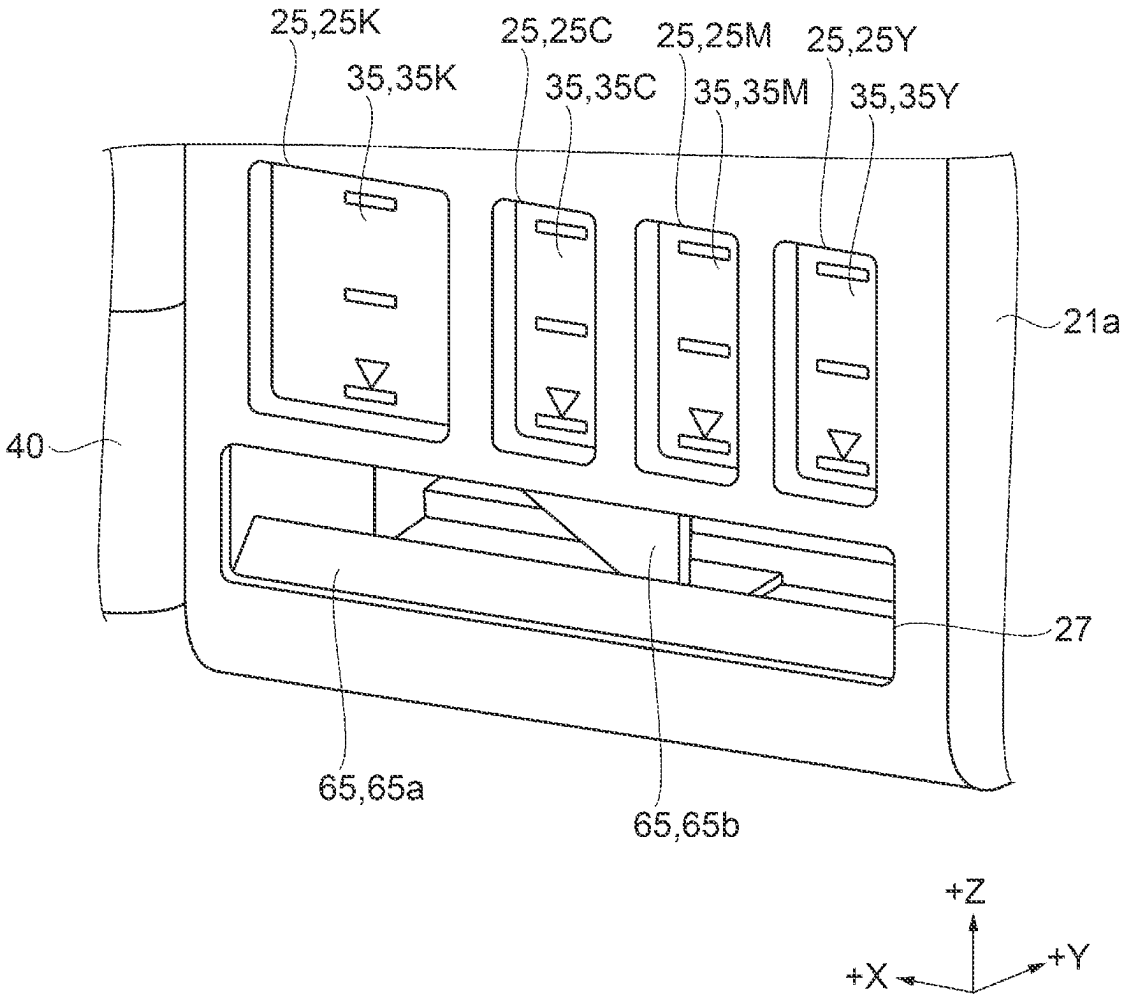


FIG. 6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25,25C
35,35C
25,25M
35,35M
25,25Y
35,35Y
21a
40
27
65,65a
65,65b
+Z
+X
+Y

FIG. 7

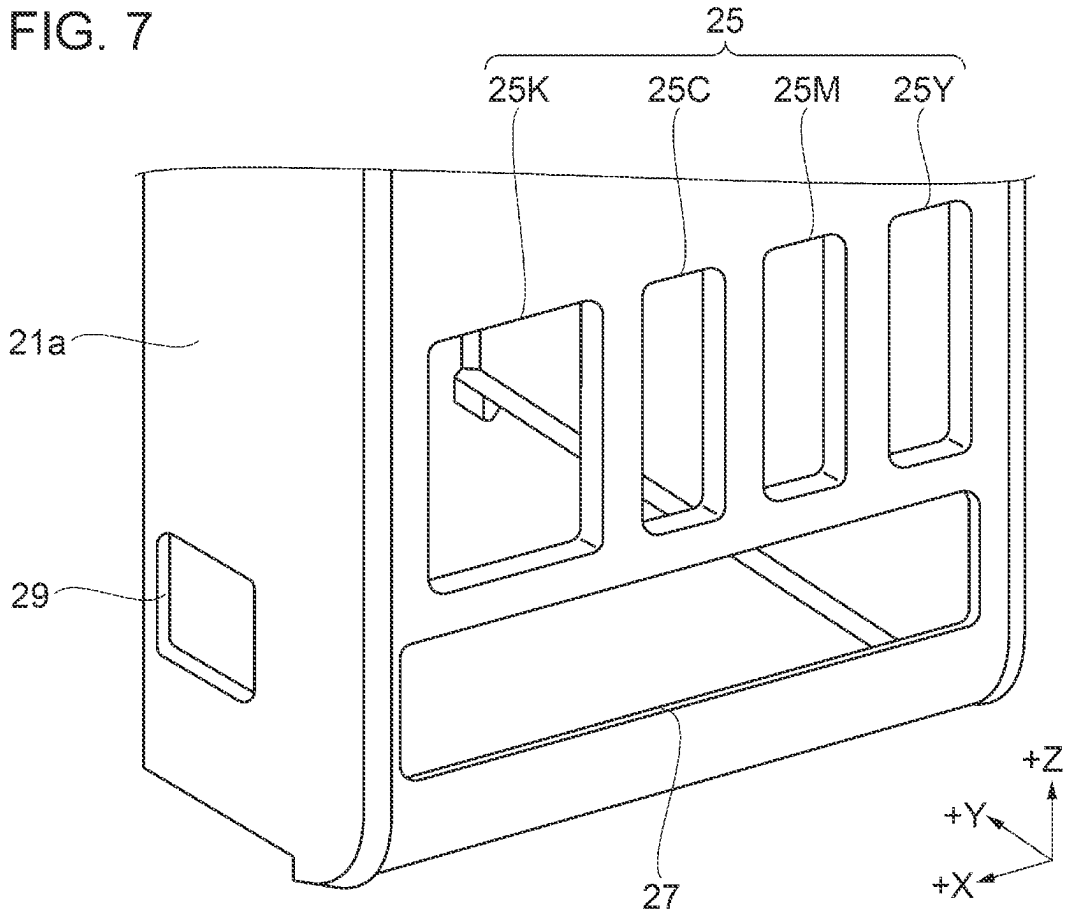


FIG. 8

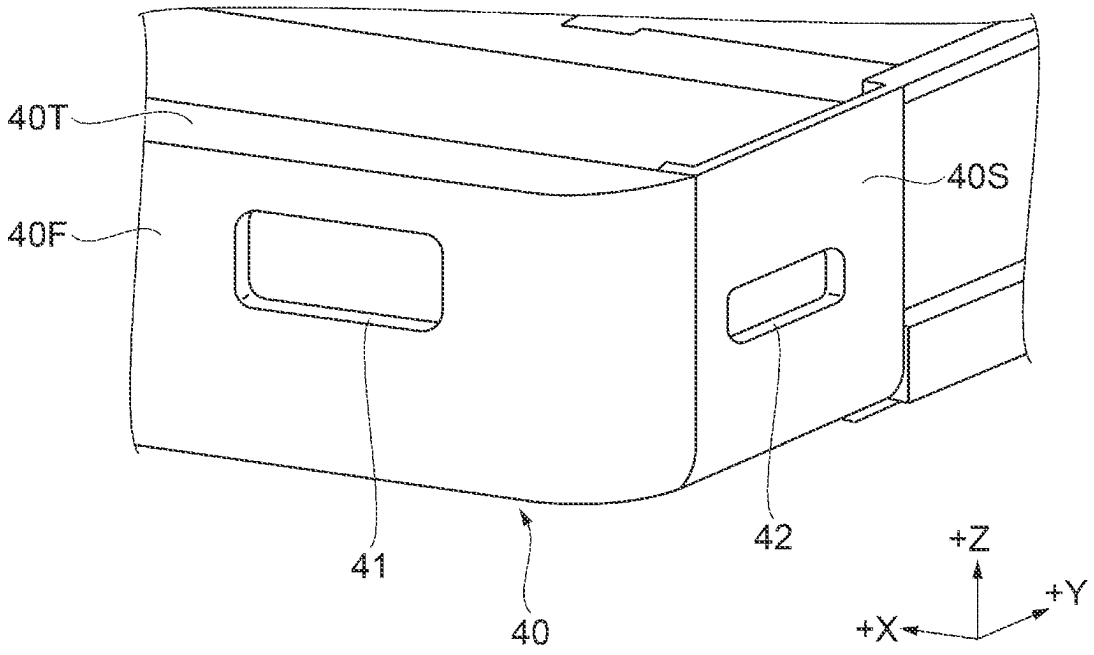


FIG. 9

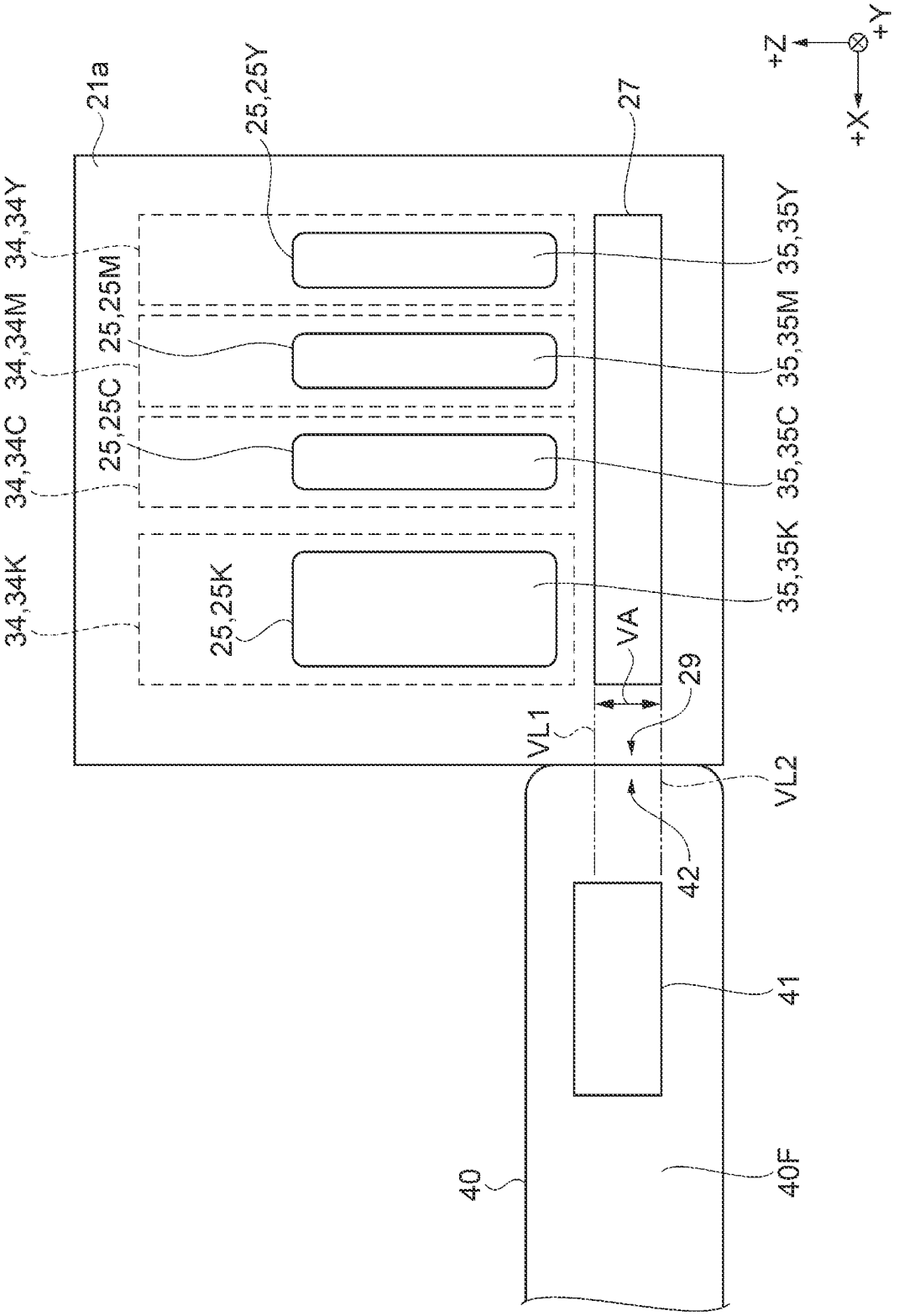

+Z
+Y
+X
21a
25,25Y
27
34,34Y
35,35Y
34,34M
25,25M
35,35M
34,34C
25,25C
35,35C
34,34K
25,25K
35,35K
VA
29
VL1
VL2
42
41
40
40F

FIG. 10

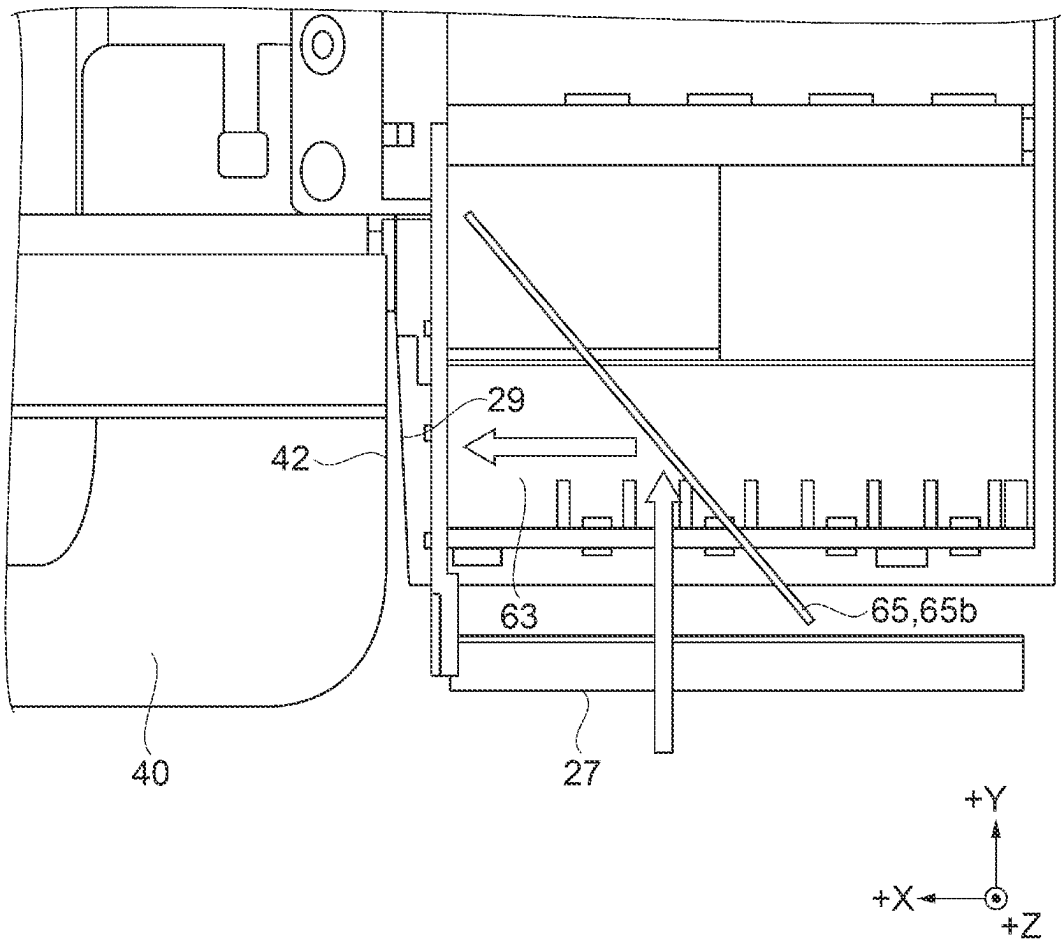


FIG. 11

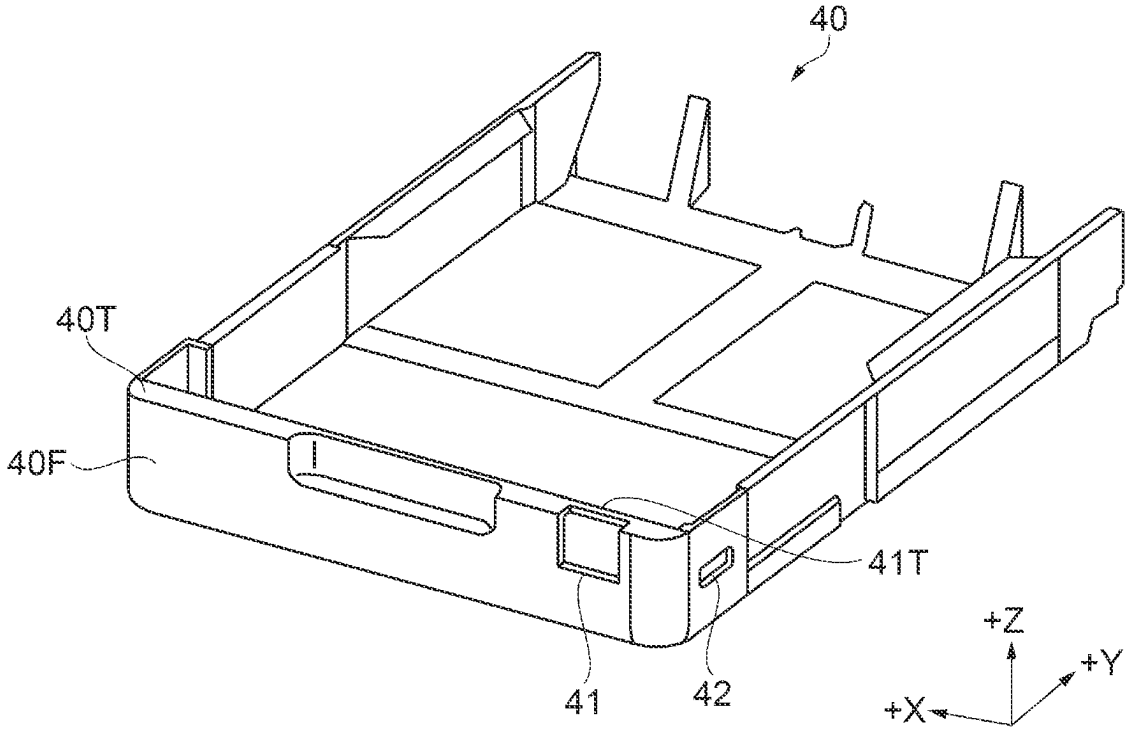


FIG. 12

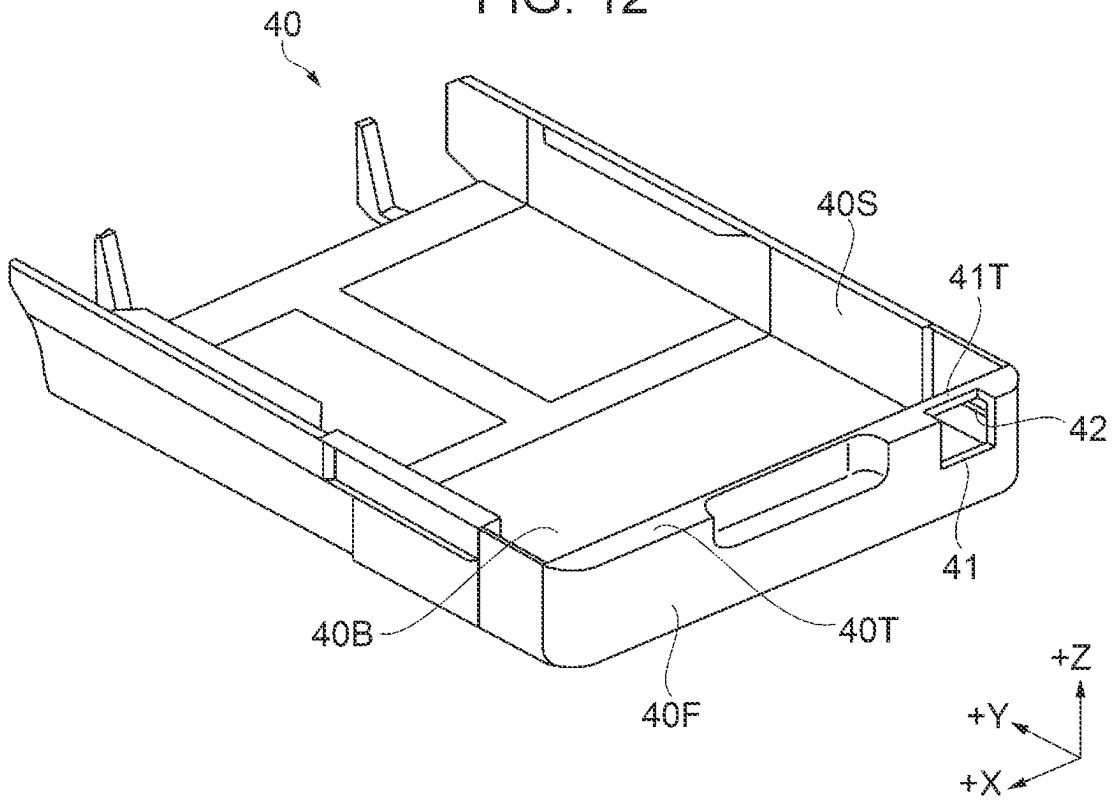


FIG. 13

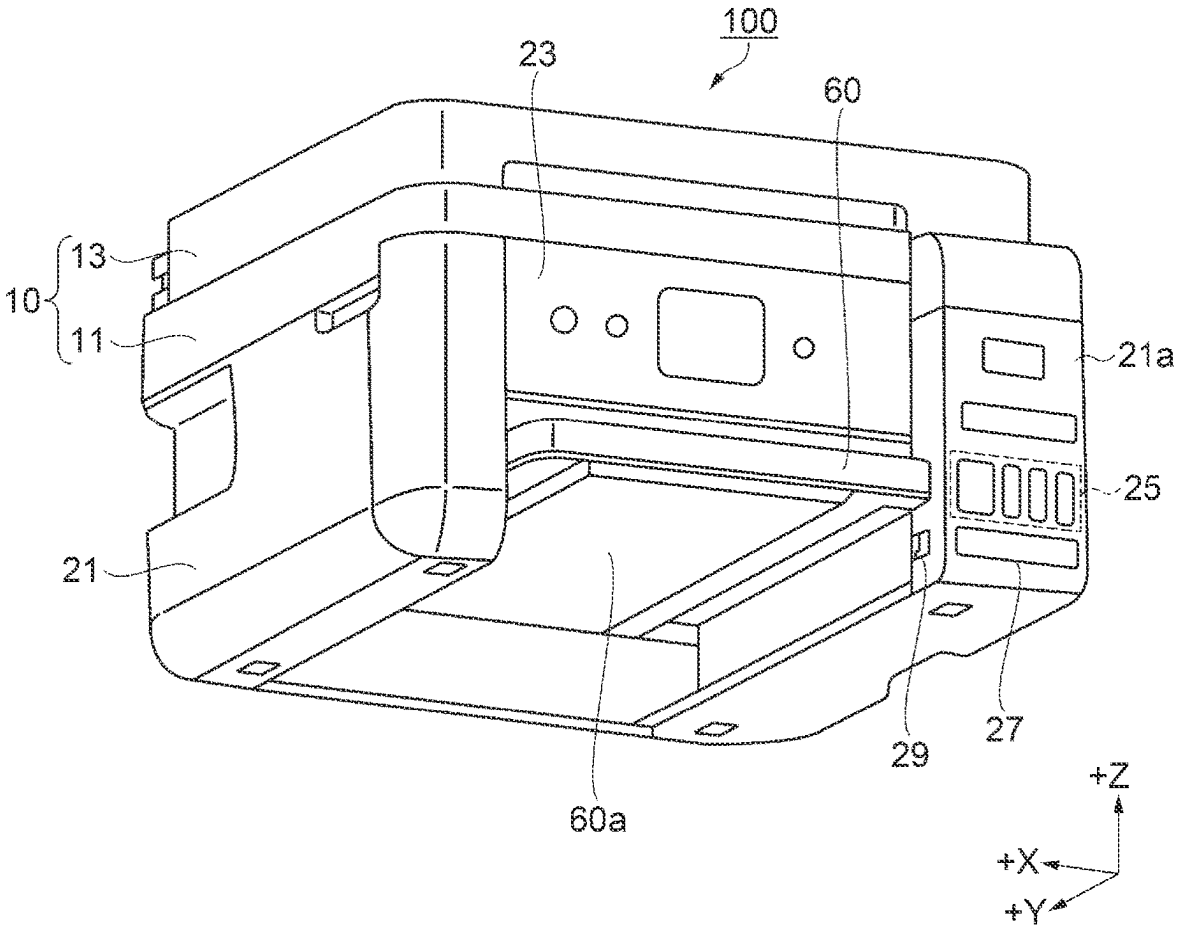
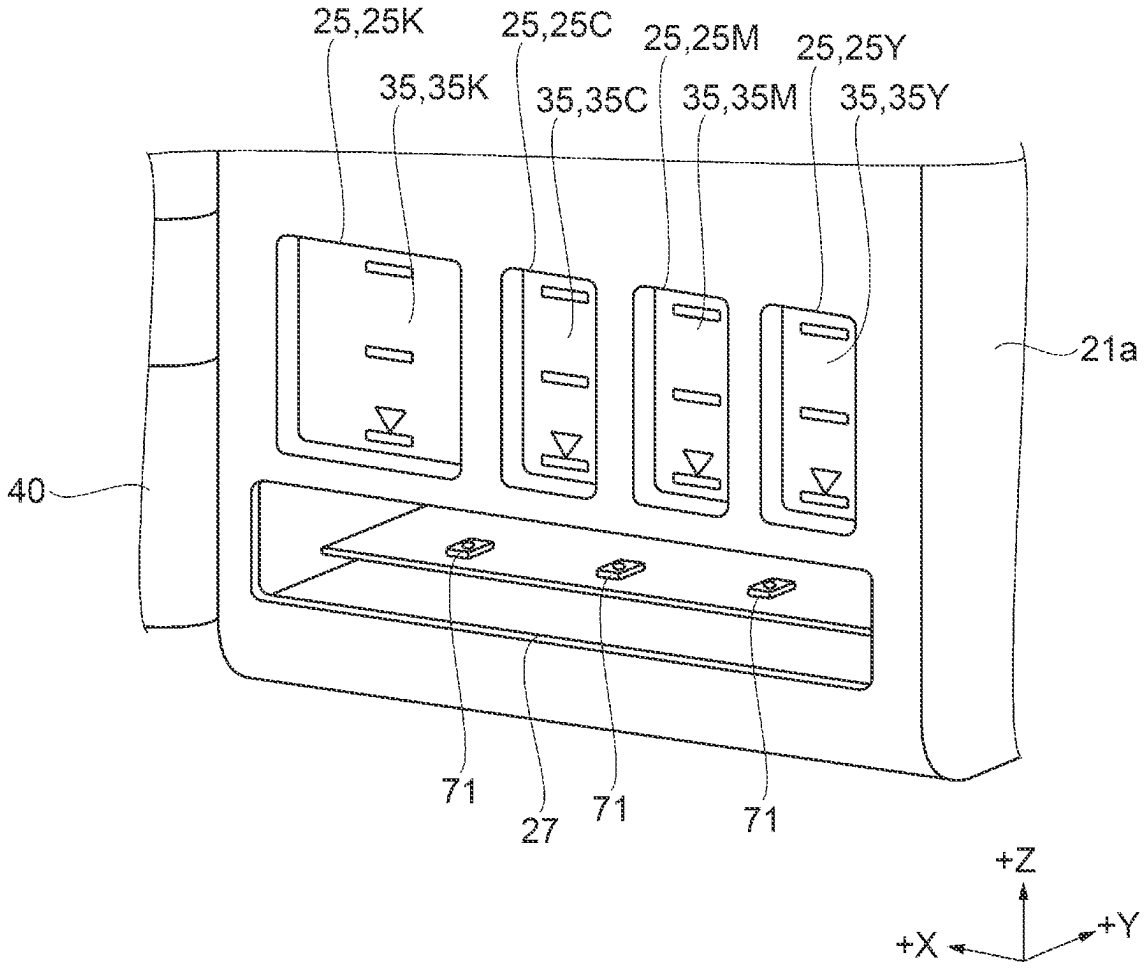


FIG. 14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25,25C
25,25M
25,25Y
35,35K
35,35C
35,35M
35,35Y
21a
40
71
27
71
71
+Z
+Y
+X

FIG. 15

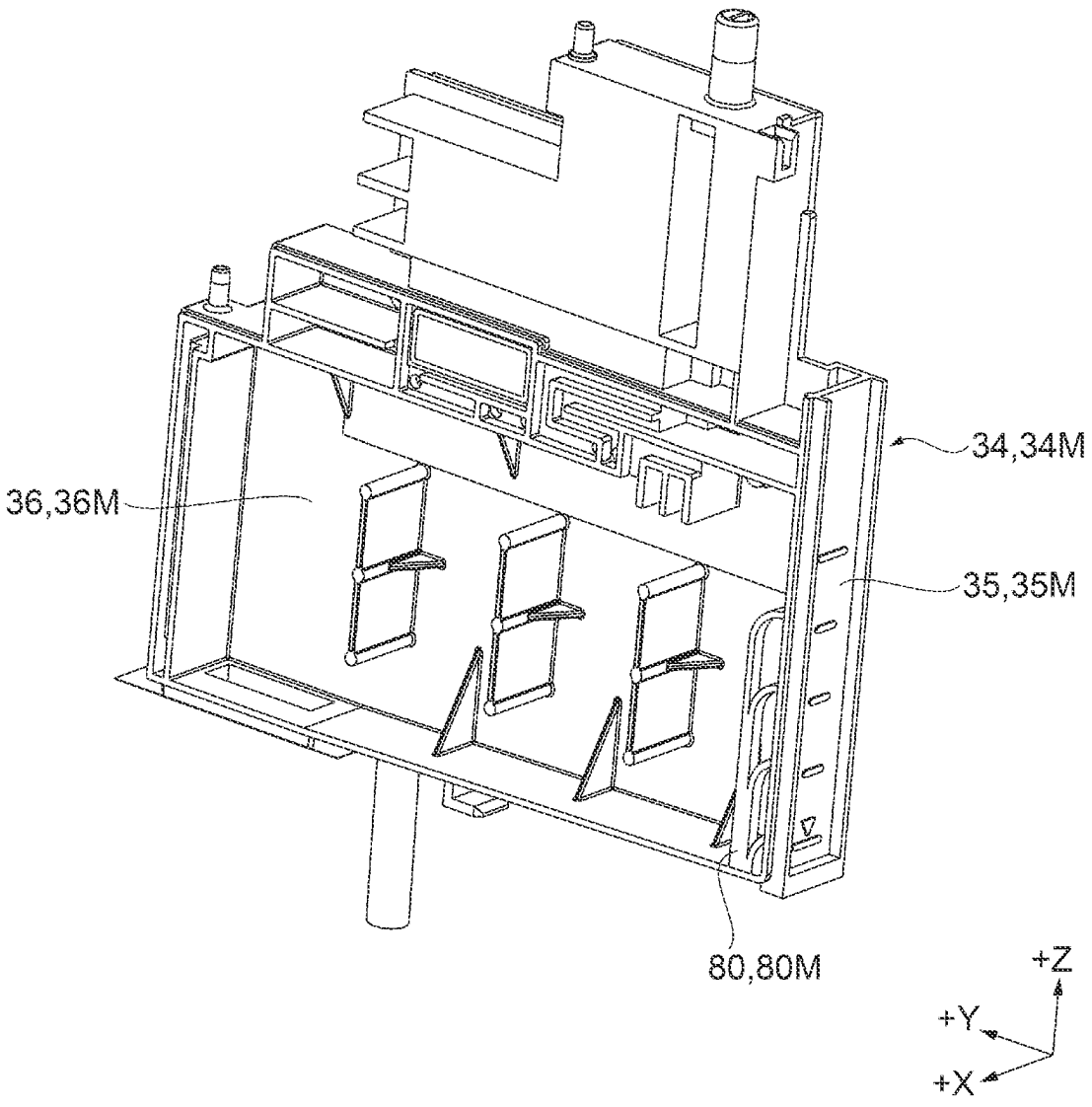


FIG. 16

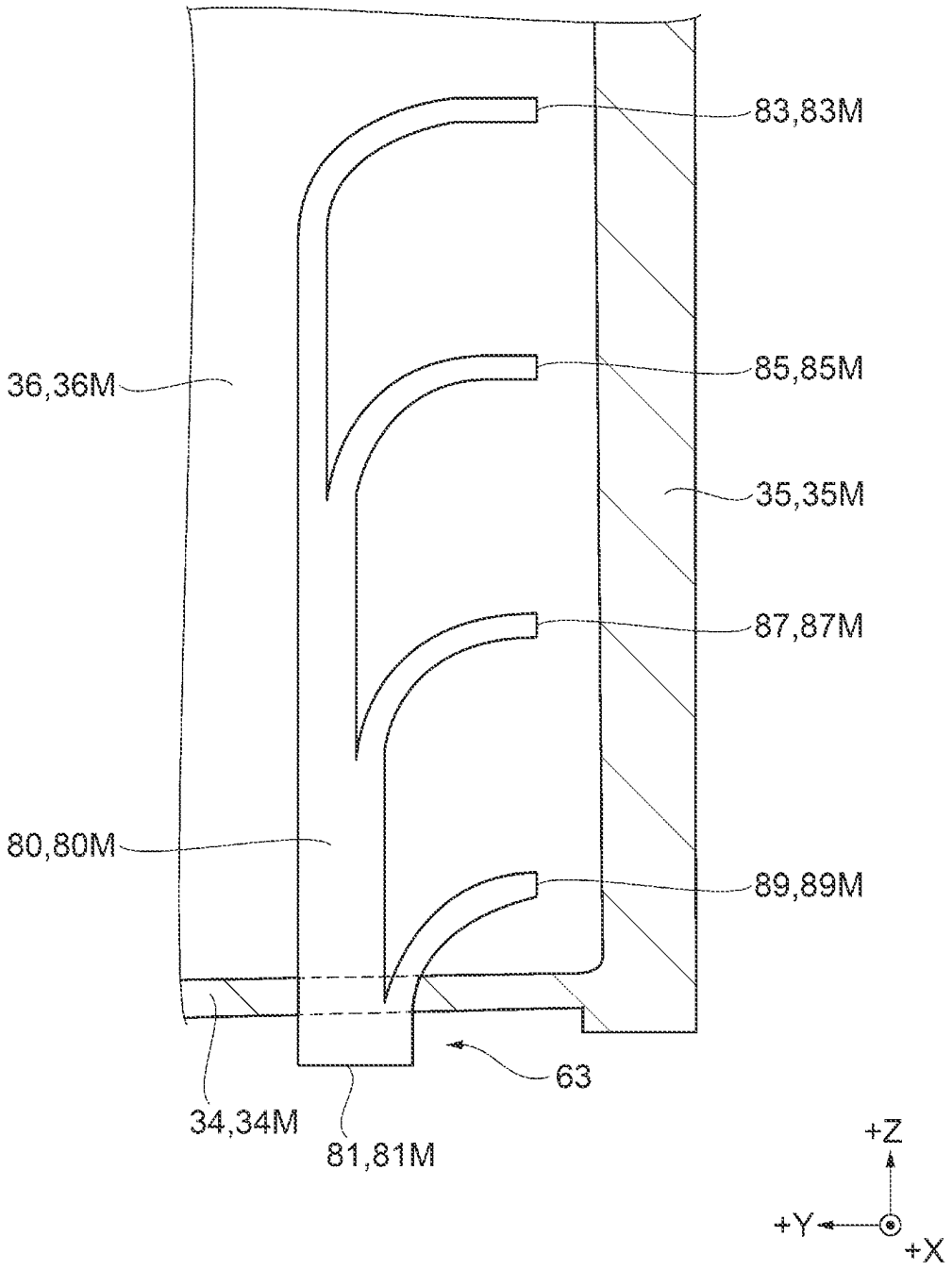

83,83M
85,85M
35,35M
87,87M
89,89M
36,36M
80,80M
63
34,34M
81,81M
+Z
+Y
+X

FIG. 17

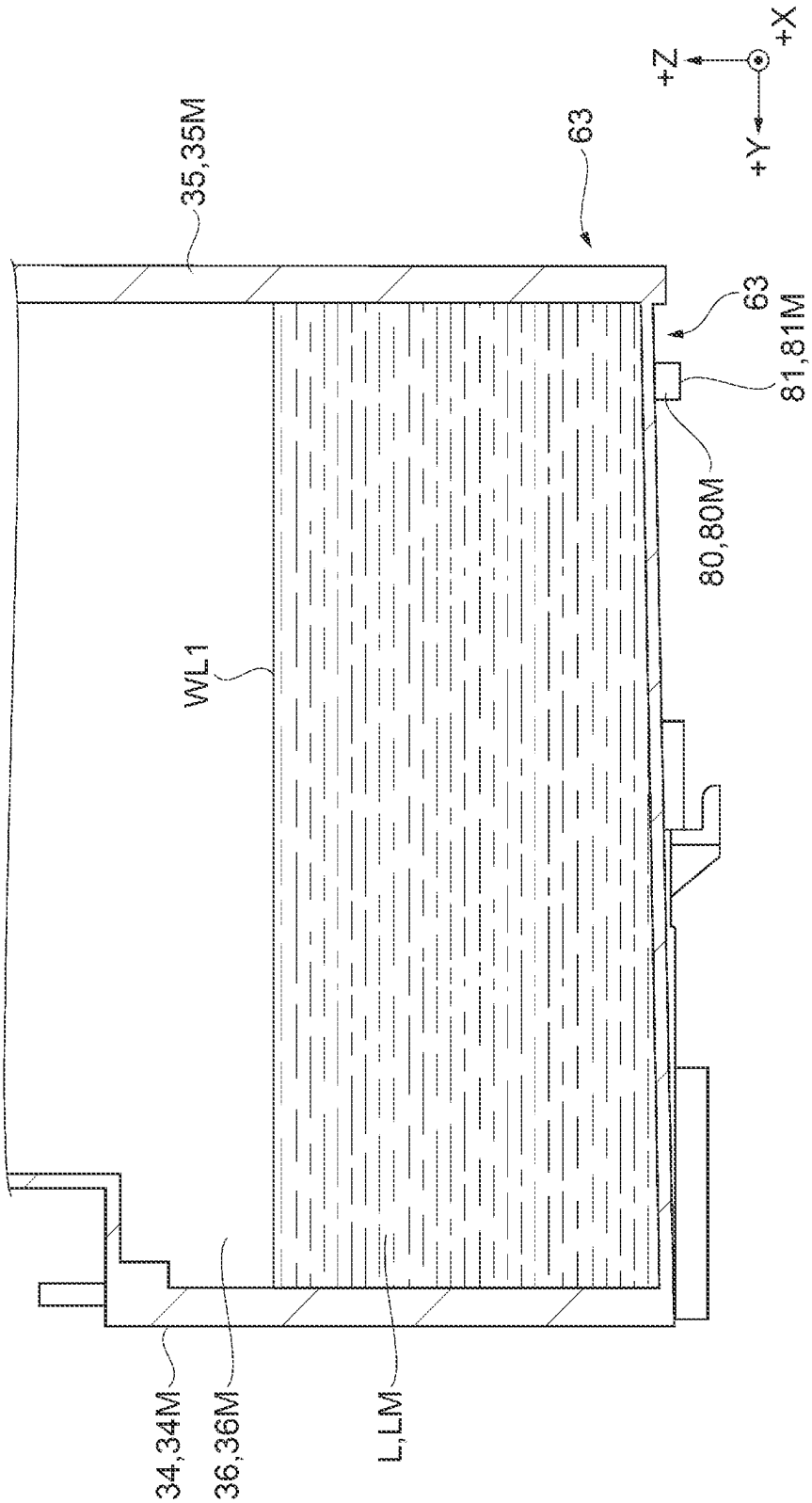


FIG. 18

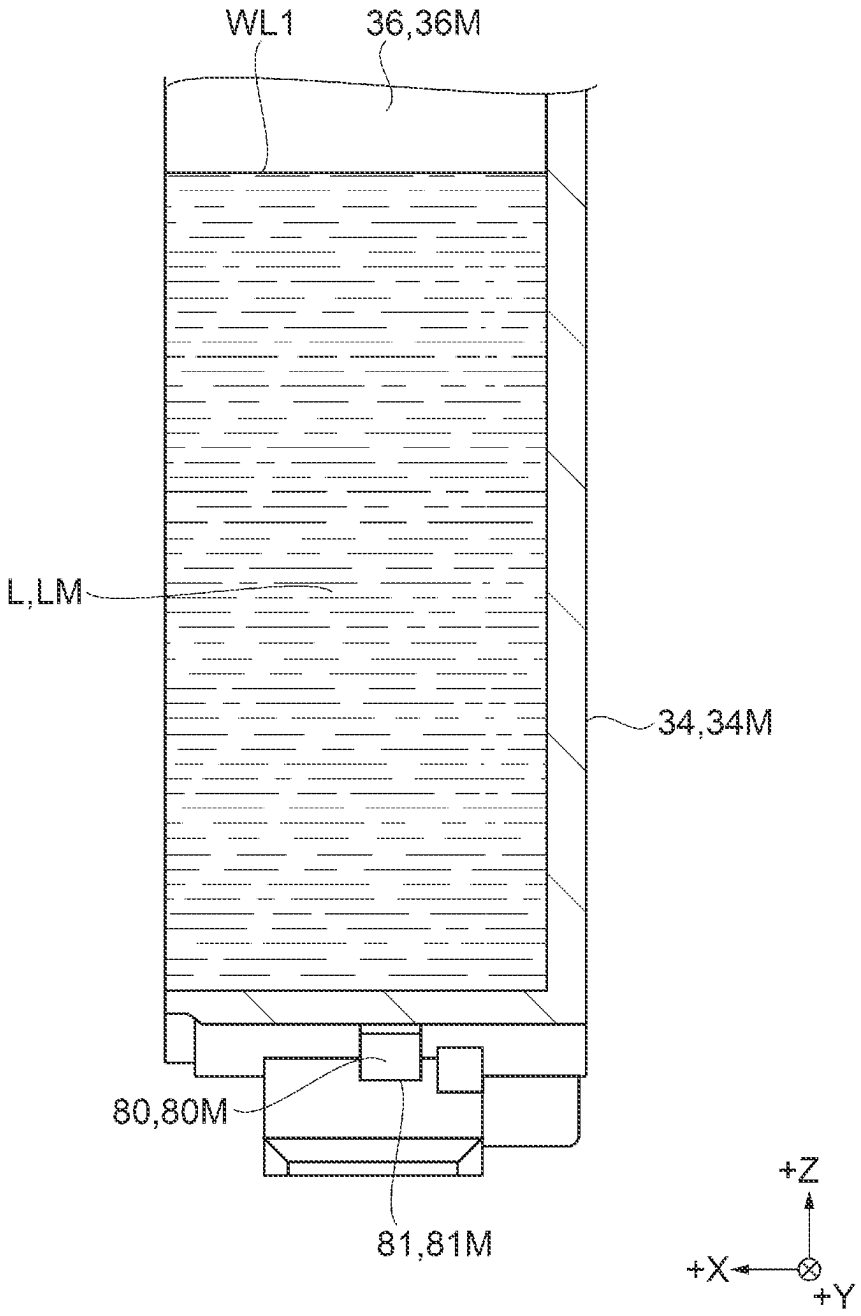


FIG. 19

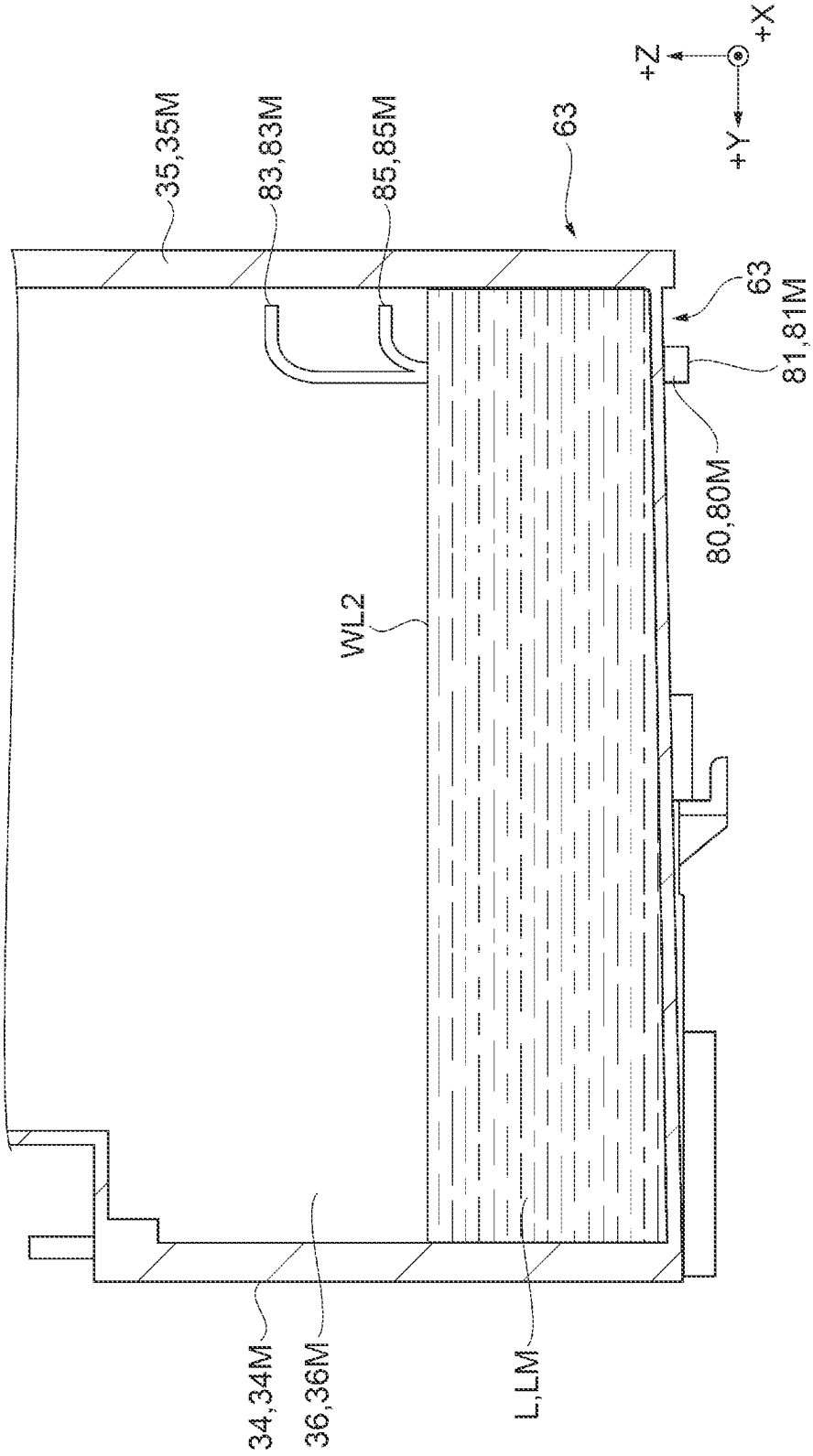


FIG. 20

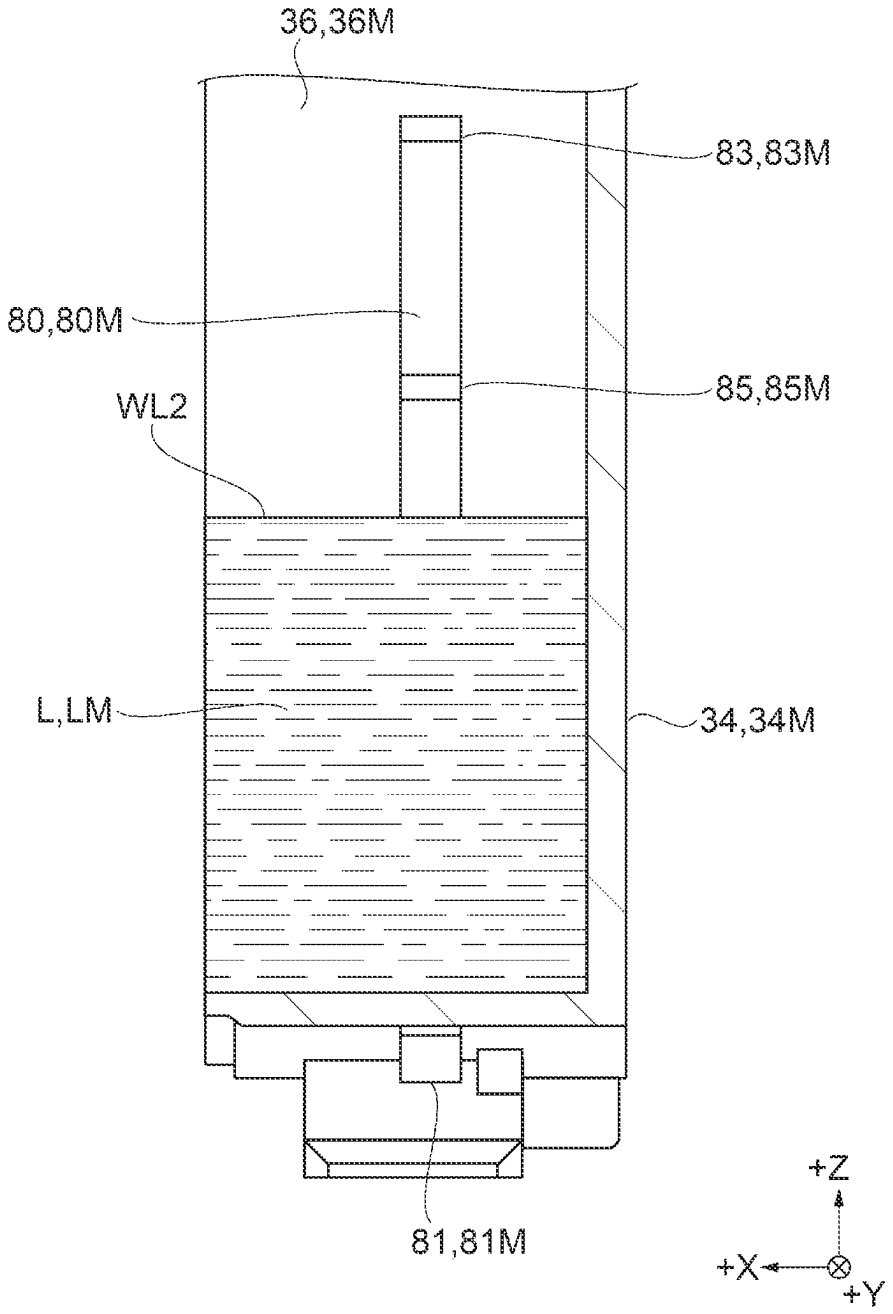


FIG. 21

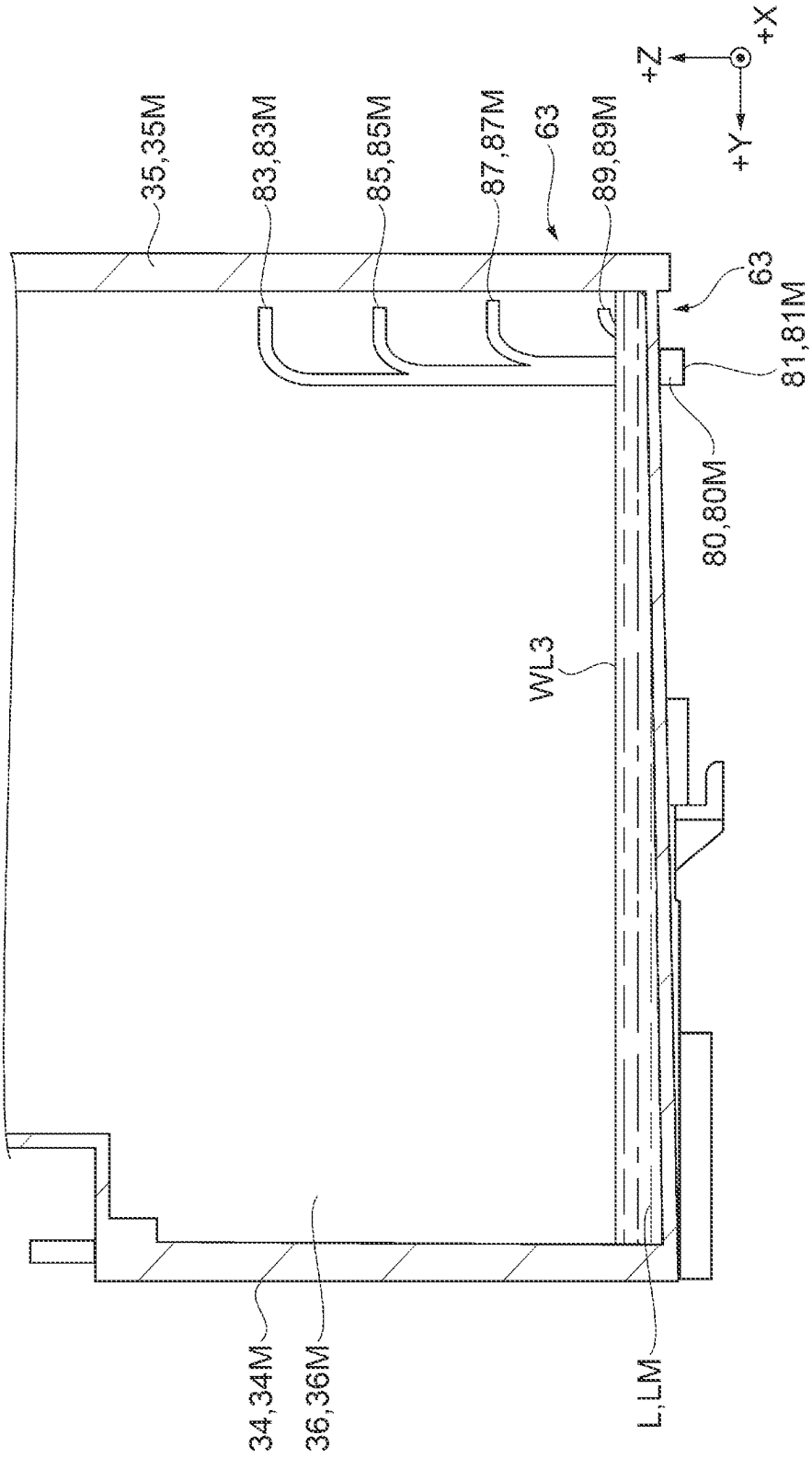
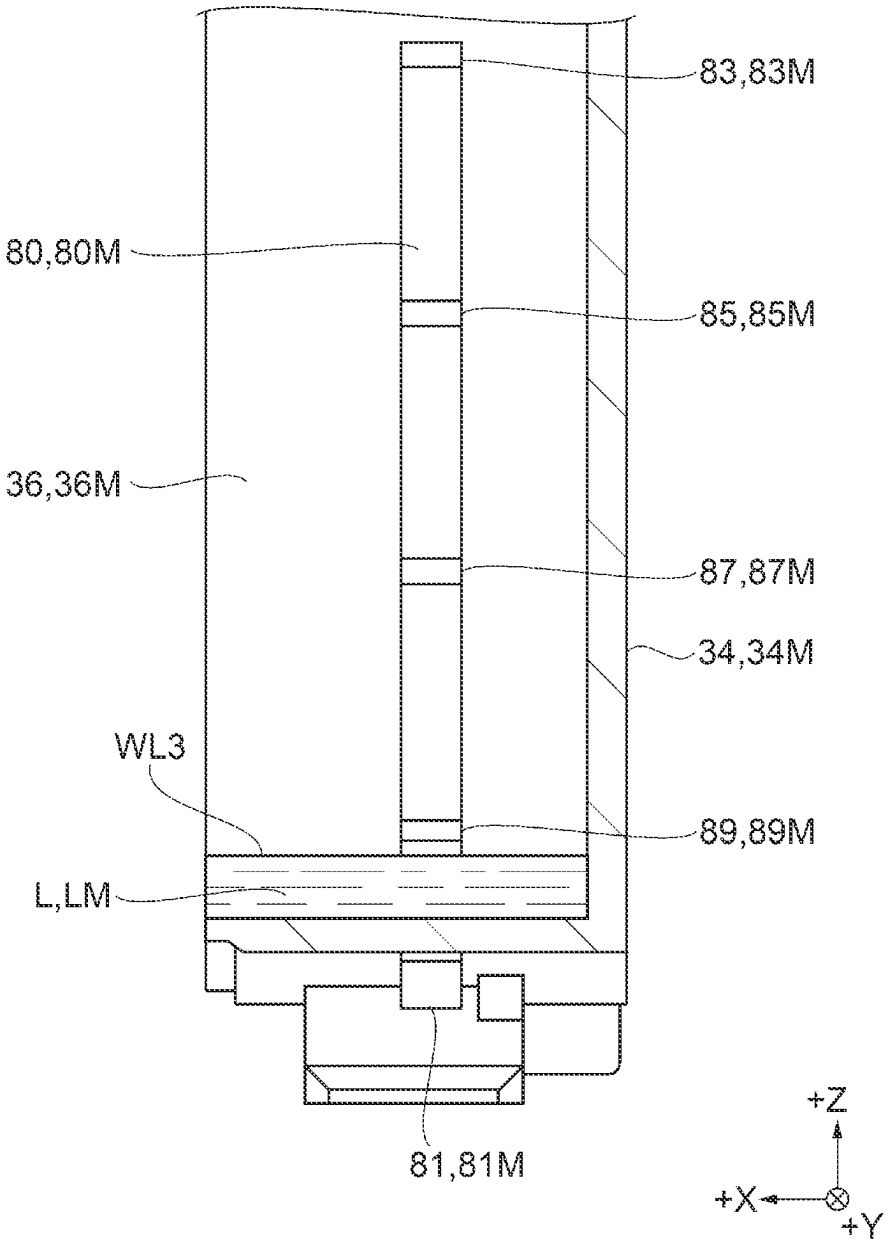

+Z
+X
+Y
35,35M
83,83M
85,85M
87,87M
63
89,89M
63
81,81M
80,80M
WL3
34,34M
36,36M
L,LM

FIG. 22



RECORDING APPARATUS

The present application is based on, and claims priority from JP Application Serial Number 2022-042271, filed Mar. 17, 2022, the disclosure of which is hereby incorporated by reference herein in its entirety.

BACKGROUND

1. Technical Field

The present disclosure relates to a recording apparatus.

2. Related Art

A recording apparatus having a viewing surface through which consumables such as ink accommodated in an ink tank can be viewed has been known. For example, an ink jet recording apparatus described in JP-A-2019-166842 includes an ink tank fixed to an apparatus main body. The ink tank accommodates ink in an accommodation chamber. An outer wall of the accommodation chamber has a viewing surface through which the inside of the accommodation chamber can be viewed from the outside.

When a user of the recording apparatus checks consumables such as ink through a viewing window such as a viewing surface, it may be difficult to view the consumables in some cases. The consumables here include not only ink but also media and the like.

SUMMARY

A recording apparatus according to the present disclosure includes: a recording portion that performs recording by ejecting a liquid onto a medium; a liquid accommodation portion that accommodates the liquid to be ejected by the recording portion; and a housing that includes an accommodation portion exterior that accommodates the liquid accommodation portion, in which the liquid accommodation portion includes a viewing region configured that the liquid accommodated is viewed, the accommodation portion exterior of the housing includes a viewing portion that faces the viewing region and is configured that the liquid is viewed, and a lighting portion that takes in light from outside the housing, and an optical path through which the light taken in passes is provided between the liquid accommodation portion and the accommodation portion exterior.

A recording apparatus according to the present disclosure includes: a recording portion that performs recording by ejecting a liquid onto a medium; a liquid accommodation portion that accommodates the liquid to be ejected by the recording portion; a housing that includes an accommodation portion exterior that accommodates the liquid accommodation portion; and a medium accommodation portion that includes a medium viewing portion configured that the medium is viewed and that accommodates the medium, in which the accommodation portion exterior includes a lighting portion that takes in light from outside the housing and an exterior opening that faces the medium accommodation portion, an optical path through which the light taken in through the lighting portion passes is provided inside the accommodation portion exterior, the medium accommodation portion includes a member opening that faces the exterior opening, and the optical path communicates with the member opening through the exterior opening.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a view illustrating a schematic configuration of an appearance of a printer.

FIG. **2** is a view illustrating a sectional configuration of the printer.

FIG. **3** is a view illustrating a schematic configuration of an ink container cover portion and the periphery of the ink container cover portion.

FIG. **4** is a view illustrating a −Y-direction surface of the ink container cover portion.

FIG. **5** is a view illustrating a sectional configuration of the ink container cover portion including an ink container.

FIG. **6** is a view illustrating a schematic configuration inside the ink container cover portion.

FIG. **7** is a view illustrating a schematic configuration of the ink container cover portion.

FIG. **8** is a view illustrating a partially enlarged configuration of a paper feed cassette.

FIG. **9** is a view illustrating a relationship between the paper feed cassette and the ink container cover portion.

FIG. **10** is a view illustrating a path of light taken in through a lighting window toward the paper feed cassette.

FIG. **11** is a view illustrating a schematic configuration of the paper feed cassette.

FIG. **12** is a view illustrating a schematic configuration of the paper feed cassette.

FIG. **13** is a view illustrating a schematic configuration of the printer with the paper feed cassette removed.

FIG. **14** is a view illustrating a configuration in which a light emitting diode (LED) is provided in a light path.

FIG. **15** is a view illustrating the ink container including a light guide member.

FIG. **16** is a view illustrating a schematic configuration of the light guide member.

FIG. **17** is a view illustrating a Y-Z section of the ink container in which ink is stored at a first water level.

FIG. **18** is a view illustrating an X-Z section of the ink container in which the ink is stored at the first water level.

FIG. **19** is a view illustrating a Y-Z section of the ink container in which the ink is stored at a second water level.

FIG. **20** is a view illustrating an X-Z section of the ink container in which the ink is stored at the second water level.

FIG. **21** is a view illustrating a Y-Z section of the ink container in which the ink is stored at a third water level.

FIG. **22** is a view illustrating an X-Z section of the ink container in which the ink is stored at the third water level.

DESCRIPTION OF EXEMPLARY EMBODIMENTS

FIG. **1** is a view illustrating a schematic configuration of an appearance of a printer **100**. The printer **100** illustrated in FIG. **1** is a multi-function machine including a reading unit **10** and a printing unit **20**. The printer **100** has a reading function of reading a document and a printing function of performing printing on a printing medium M. The printer **100** corresponds to an example of a recording apparatus. The printing medium M corresponds to an example of a medium. Printing corresponds to an example of recording.

Multiple diagrams including FIG. **1** illustrate an XYZ coordinate system. An X axis, a Y axis, and a Z axis are orthogonal to one another. The X axis is an axis along a width of the printer **100**. A −X direction corresponds to a right direction as viewed from a user when a front surface of the apparatus faces the user. A +X direction corresponds to a left direction as viewed from the user when the front surface of the apparatus faces the user. Here, the front side of the apparatus is a side surface on which an operation panel **23** is provided among peripheral side surfaces of the printer **100**. The operation panel **23** will be described later.

The Y axis is an axis along a depth of the printer **100**. A +Y direction corresponds to a direction from the front surface of the apparatus toward a back side of the apparatus. A −Y direction corresponds to a direction from the back side of the apparatus toward the front surface of the apparatus. The Z axis is an axis along a height of the printer **100**. A +Z direction corresponds to a vertically upward direction. A −Z direction corresponds to a vertically downward direction.

The reading unit **10** reads a document. The reading unit **10** is provided above the printing unit **20**. The reading unit **10** includes a document mounting portion **11** and a document transport portion **13**. The document transport portion **13** is provided above the document mounting portion **11**. The document transport portion **13** is supported so as to be openable/closable with respect to the document mounting portion **11**.

The document mounting portion **11** is a flatbed type scanner. The document mounting portion **11** includes a contact image sensor and a document mounting surface. The contact image sensor and the document mounting surface are not illustrated. The document mounting portion **11** supports the document transport portion **13** when the document transport portion **13** is closed. When the document transport portion **13** is opened by the user, the document mounting surface is exposed. The contact image sensor reads the document mounted on the document mounting surface. The contact image sensor generates image data by reading the document.

The document transport portion **13** transports the document. The document is mounted on an upper surface of the document transport portion **13**. The document transport portion **13** transports the mounted document to a position facing the contact image sensor. The document transport portion **13** is an auto document feeder (ADF). The document transport portion **13** transports the document read by the contact image sensor to a discharge port. The discharge port is not illustrated.

The printing unit **20** performs printing on the printing medium M. The printing unit **20** is an ink jet printer that performs printing by ejecting ink L onto the printing medium M. The printing unit **20** performs printing based on printing data. The printing data is data received from an external apparatus. The printing data may be image data generated by the reading unit **10**. The printing unit **20** includes a cover body **21**, the operation panel **23**, a paper feed cassette **40**, and a paper discharge tray **60**.

The cover body **21** covers various functional portions arranged in the printing unit **20**. The cover body **21** covers an outer peripheral portion of the printing unit **20**. The cover body **21** includes one or more cover members. The cover body **21** includes an ink container cover portion **21***a*. The cover body **21** corresponds to an example of a housing.

The ink container cover portion **21***a* covers an ink container **34** as described later. The ink container cover portion **21***a* includes one or more cover members. The ink container cover portion **21***a* may be implemented by a part of one cover member. The ink container cover portion **21***a* includes an ink amount checking window **25** and a lighting window **27**. Details of the ink amount checking window **25** and the lighting window **27** will be described later. The ink container cover portion **21***a* corresponds to an example of an accommodation portion exterior.

The operation panel **23** receives an operation from the user. The operation panel **23** is provided on a front surface of the printer **100**. The operation panel **23** includes a display, an operation button, and the like. The display displays a result of an operation received from the user. The operation button is a power button or the like. The operation panel **23** may be implemented by a touch panel having a touch input function. The configuration of the operation panel **23** is not limited as long as the operation panel **23** can receive an operation from the user.

The paper feed cassette **40** accommodates the printing medium M. A printing head **31** to be described later performs printing on the accommodated printing medium M. The paper feed cassette **40** is provided at a position on a +X-direction side of the ink container cover portion **21***a*. The paper feed cassette **40** is provided at a position adjacent to the ink container cover portion **21***a*. The paper feed cassette **40** is configured to be detachable from the printing unit **20**. The paper feed cassette **40** is configured to be removable in the −Y direction from the printing unit **20**. The user moves the paper feed cassette **40** in the +Y direction to mount the paper feed cassette **40** on the printing unit **20**. The paper feed cassette **40** includes a cassette front opening **41**. The cassette front opening **41** is provided in a cassette front surface **40**F of the paper feed cassette **40**. Details of the cassette front opening **41** will be described later. The paper feed cassette **40** corresponds to an example of a medium accommodation portion.

The printing medium M subjected to printing by the printing head **31** is mounted on the paper discharge tray **60**. The paper discharge tray **60** is provided above the paper feed cassette **40**. The paper feed cassette **40**, the paper discharge tray **60**, and the operation panel **23** are arranged in this order in the +Z direction. The paper discharge tray **60** is configured to be pullable in the −Y direction. The paper discharge tray **60** can be moved in the −Y direction or the +Y direction by the user's operation. The paper discharge tray **60** may be configured to be movable in the −Y direction or the +Y direction by a tray driving mechanism (not illustrated). FIG. **1** illustrates a state in which the paper discharge tray **60** is housed in the printing unit **20**.

FIG. **2** is a view illustrating a sectional configuration of the printer **100**. FIG. **2** illustrates a Y-Z section of the printer **100**. The printing unit **20** illustrated in FIG. **2** includes a printing portion **30**, a plurality of transport roller pairs, a platen **55**, the paper feed cassette **40**, and the paper discharge tray **60**.

The paper feed cassette **40** illustrated in FIG. **2** accommodates a plurality of printing media M. A pickup roller **43** is provided inside the paper feed cassette **40**. The pickup roller **43** feeds the printing medium M mounted at the top in the paper feed cassette **40** into the printing unit **20**.

The plurality of transport roller pairs transport the printing medium M. The plurality of transport roller pairs illustrated in FIG. **2** include a first transport roller pair **45**, a second transport roller pair **47**, a third transport roller pair **49**, a fourth transport roller pair **51**, and a paper discharge roller pair **57**. The first transport roller pair **45**, the second transport roller pair **47**, the third transport roller pair **49**, and the fourth transport roller pair **51** transport the printing medium M from the paper feed cassette **40** to the printing portion **30**. The paper discharge roller pair **57** transports the printing medium M from the printing portion **30** to the paper discharge tray **60**.

The printing portion **30** performs printing on the printing medium M. The printing portion **30** performs printing on the printing medium M by ejecting the ink L onto the printing medium M. The printing portion **30** corresponds to an example of a recording portion. The printing portion **30** includes the printing head **31** and a carriage **33**.

The printing head **31** ejects the ink L onto the printing medium M. The printing head **31** is an ink jet head that ejects

the ink L. The printing head **31** ejects the ink L stored in the ink container **34** to be described later onto the printing medium M. The ink L stored in the ink container **34** flows to the printing head **31** by an ink flow mechanism (not illustrated). The ink L that flowed to the printing head **31** is ejected from nozzles (not illustrated). The nozzles are arranged on a −Z-direction surface of the printing head **31**. The printing head **31** ejects one or more types of ink L. The ink L corresponds to an example of a liquid.

The printing head **31** is mounted on the carriage **33**. The carriage **33** is configured to be movable. The carriage **33** moves in the +X direction or the −X direction by a carriage driving mechanism (not illustrated). The carriage **33** moves the mounted printing head **31** in the +X direction or the −X direction. The printing head **31** ejects the ink L when moving in the +X direction or the −X direction. The printing head **31** may eject the ink L when moving in the +X direction and the −X direction.

The platen **55** supports the printing medium M transported by the fourth transport roller pair **51**. The platen **55** is provided at a position facing the printing head **31**. The printing head **31** ejects the ink L onto the printing medium M supported by the platen **55**. The platen **55** may be coupled to a medium suction mechanism (not illustrated). The platen **55** supports the printing medium M sucked by the medium suction mechanism.

The printing medium M subjected to printing by the printing head **31** is mounted on the paper discharge tray **60**. FIG. **2** illustrates the paper discharge tray **60** pulled out in the −Y direction. The paper discharge tray **60** receives the printing medium M transported from the printing portion **30** by the paper discharge roller pair **57**.

FIG. **3** is a view illustrating a schematic configuration of the ink container cover portion **21***a* and the periphery of the ink container cover portion **21***a*. FIG. **3** illustrates the ink container cover portion **21***a*, the operation panel **23**, the paper feed cassette **40**, and the paper discharge tray **60**. The operation panel **23**, the paper feed cassette **40**, and the paper discharge tray **60** are arranged at positions adjacent to one another in the +X direction with respect to the ink container cover portion **21***a*. The ink container cover portion **21***a* includes the ink amount checking window **25** and the lighting window **27** on a −Y-direction surface.

The ink amount checking window **25** illustrated in FIG. **3** includes a black ink amount checking window **25**K, a cyan ink amount checking window **25**C, a magenta ink amount checking window **25**M, and a yellow ink amount checking window **25**Y. The black ink amount checking window **25**K, the cyan ink amount checking window **25**C, the magenta ink amount checking window **25**M, and the yellow ink amount checking window **25**Y are independent openings. The ink amount checking window **25** illustrated in FIG. **3** includes four openings, but is not limited thereto. The ink amount checking window **25** may include one or more openings. A light-transmissive checking window cover may be provided to the ink amount checking window **25**. Since the checking window cover is provided to the ink amount checking window **25**, it is possible to prevent dust from entering the inside of the ink container cover portion **21***a*. The ink amount checking window **25** corresponds to an example of a viewing portion. Any one of the black ink amount checking window **25**K, the cyan ink amount checking window **25**C, the magenta ink amount checking window **25**M, and the yellow ink amount checking window **25**Y corresponds to an example of a first region and a second region.

The ink amount checking window **25** is configured such that an ink amount indicating portion **35** is viewable. The ink amount indicating portion **35** constitutes a part of a wall surface of the ink container **34**. The ink amount indicating portion **35** is configured such that the ink L stored inside the ink container **34** is viewable. The ink amount indicating portion **35** is formed of, for example, a light-transmissive material. The user can grasp the amount of ink by checking a water level of the ink L viewed through the ink amount indicating portion **35**.

The black ink amount checking window **25**K is configured such that a black ink amount indicating portion **35**K is viewable. The black ink amount indicating portion **35**K constitutes a part of a wall surface of a black ink container **34**K. The black ink amount indicating portion **35**K is configured such that a water level of black ink LB stored inside the black ink container **34**K is viewable.

The cyan ink amount checking window **25**C is configured such that a cyan ink amount indicating portion **35**C is viewable. The cyan ink amount indicating portion **35**C constitutes a part of a wall surface of a cyan ink container **34**C. The cyan ink amount indicating portion **35**C is configured such that a water level of cyan ink LC stored inside the cyan ink container **34**C is viewable.

The magenta ink amount checking window **25**M is configured such that a magenta ink amount indicating portion **35**M is viewable. The magenta ink amount indicating portion **35**M constitutes a part of a wall surface of a magenta ink container **34**M. The magenta ink amount indicating portion **35**M is configured such that a water level of magenta ink LM stored inside the magenta ink container **34**M is viewable.

The yellow ink amount checking window **25**Y is configured such that a yellow ink amount indicating portion **35**Y is viewable. The yellow ink amount indicating portion **35**Y constitutes a part of a wall surface of a yellow ink container **34**Y. The yellow ink amount indicating portion **35**Y is configured such that a water level of yellow ink LY stored inside the yellow ink container **34**Y is viewable.

The ink amount indicating portion **35** is used when the black ink amount indicating portion **35**K, the cyan ink amount indicating portion **35**C, the magenta ink amount indicating portion **35**M, and the yellow ink amount indicating portion **35**Y are illustrated without distinction. Any one of the black ink amount indicating portion **35**K, the cyan ink amount indicating portion **35**C, the magenta ink amount indicating portion **35**M, and the yellow ink amount indicating portion **35**Y corresponds to an example of a viewing region and a second viewing region.

The lighting window **27** takes in external light, which is light from outside the cover body **21**, to the inside of the ink container cover portion **21***a*. The lighting window **27** is an opening that takes in the external light. The lighting window **27** is provided below the ink amount checking window **25**. The lighting window **27** is provided below the black ink amount checking window **25**K, the cyan ink amount checking window **25**C, the magenta ink amount checking window **25**M, and the yellow ink amount checking window **25**Y. A position where the lighting window **27** is arranged is not limited as long as the lighting window **27** can take in the external light. The lighting window **27** is preferably provided below the ink amount checking window **25**. In this case, it is possible to effectively utilize a region below the ink amount checking window **25**. The lighting window **27** corresponds to an example of a lighting portion.

The lighting window **27** is preferably provided below the ink amount checking window **25**. Since the lighting window **27** is provided below the ink amount checking window **25**,

the lighting window **27** can take in the external light when the user is working above the ink amount checking window **25**.

FIG. **4** illustrates the −Y-direction surface of the ink container cover portion **21***a*. FIG. **4** illustrates a front surface portion of the ink container cover portion **21***a* when the user views the ink container cover portion **21***a* from the −Y direction. FIG. **4** illustrates the ink container **34**. The ink container **34** is arranged more toward the +Y direction than the front surface portion of the ink container cover portion **21***a* is.

As illustrated in FIG. **4**, the ink amount checking window **25** and the lighting window **27** are provided in the front surface portion of the ink container cover portion **21***a*. The ink amount checking window **25** illustrated in FIG. **4** includes the black ink amount checking window **25**K, the cyan ink amount checking window **25**C, the magenta ink amount checking window **25**M, and the yellow ink amount checking window **25**Y.

As illustrated in FIG. **4**, the ink amount indicating portion **35** is arranged for the ink amount checking window **25**. The black ink amount indicating portion **35**K is arranged for the black ink amount checking window **25**K. The cyan ink amount indicating portion **35**C is arranged for the cyan ink amount checking window **25**C. The magenta ink amount indicating portion **35**M is arranged for the magenta ink amount checking window **25**M. The yellow ink amount indicating portion **35**Y is arranged for the yellow ink amount checking window **25**Y.

FIG. **4** illustrates the black ink container **34**K, the cyan ink container **34**C, the magenta ink container **34**M, and the yellow ink container **34**Y. The ink container **34** is used when the black ink container **34**K, the cyan ink container **34**C, the magenta ink container **34**M, and the yellow ink container **34**Y are illustrated without distinction. Any two of the black ink container **34**K, the cyan ink container **34**C, the magenta ink container **34**M, and the yellow ink container **34**Y correspond to examples of a liquid accommodation portion and a second liquid accommodation portion.

The black ink container **34**K accommodates the black ink LB. The black ink container **34**K includes the black ink amount indicating portion **35**K as a part of the peripheral surface. The black ink amount indicating portion **35**K is configured such that the accommodated black ink LB is viewable. The black ink container **34**K is arranged at a position on a +Y direction-side of the black ink amount checking window **25**K. The black ink container **34**K supplies the black ink LB to the printing head **31**.

The cyan ink container **34**C accommodates the cyan ink LC. The cyan ink container **34**C includes the cyan ink amount indicating portion **35**C as a part of the peripheral surface. The cyan ink amount indicating portion **35**C is configured such that the accommodated cyan ink LC is viewable. The cyan ink container **34**C is arranged at a position on a +Y-direction side of the cyan ink amount checking window **25**C. The cyan ink container **34**C supplies the cyan ink LC to the printing head **31**.

The magenta ink container **34**M accommodates the magenta ink LM. The magenta ink container **34**M includes the magenta ink amount indicating portion **35**M as a part of the peripheral surface. The magenta ink amount indicating portion **35**M is configured such that the accommodated magenta ink LM is viewable. The magenta ink container **34**M is arranged at a position on a +Y-direction side of the magenta ink amount checking window **25**M. The magenta ink container **34**M supplies the magenta ink LM to the printing head **31**.

The yellow ink container **34**Y accommodates the yellow ink LY. The yellow ink container **34**Y includes the yellow ink amount indicating portion **35**Y as a part of the peripheral surface. The yellow ink amount indicating portion **35**Y is configured such that the stored yellow ink LY is viewable. The yellow ink container **34**Y is arranged at a position on a +Y-direction side of the yellow ink amount checking window **25**Y. The yellow ink container **34**Y supplies the yellow ink LY to the printing head **31**. Two inks L among the black ink LB, the cyan ink LC, the magenta ink LM, and the yellow ink LY correspond to examples of the liquid and a second liquid.

The ink container cover portion **21***a* illustrated in FIG. **4** accommodates the black ink container **34**K, the cyan ink container **34**C, the magenta ink container **34**M, and the yellow ink container **34**Y, but is not limited thereto. The ink container cover portion **21***a* houses one or more ink containers **34**. In FIG. **4**, the black ink container **34**K, the cyan ink container **34**C, the magenta ink container **34**M, and the yellow ink container **34**Y are arranged in the +X direction in this order, but are not limited thereto. The arrangement order of the plurality of ink containers **34** can be changed as appropriate. One or more ink containers **34** may store the ink L other than the black ink LB, the cyan ink LC, the magenta ink LM, and the yellow ink LY. The ink container **34** may be configured to be replenishable with ink through a filling port (not illustrated). In this case, it is desirable that the ink L in the ink container **34** can be easily viewed even when the user replenishes the ink container **34** with the ink L.

The lighting window **27** is provided below the black ink amount checking window **25**K, the cyan ink amount checking window **25**C, the magenta ink amount checking window **25**M, and the yellow ink amount checking window **25**Y. A width of the lighting window **27** illustrated in FIG. **4** along the X axis is larger than the sum of widths of the four ink amount checking windows **25** along the X axis. The width of the lighting window **27** along the X axis is preferably larger than the width of each of the ink amount checking windows **25** along the X axis. The width of the lighting window **27** along the X axis is preferably larger than the sum of the widths of two adjacent ink amount checking windows **25** along the X axis. By making the width of the lighting window **27** along the X axis larger than the width of one ink amount checking window **25** along the X axis, the lighting window **27** can more easily take in the external light. Further, the lighting window **27** may be divided into a plurality of parts. In this case, the width of the lighting window **27** along the X axis indicates the total width of the plurality of lighting windows **27** along the X axis.

FIG. **5** illustrates a sectional configuration of the ink container cover portion **21***a* including the ink container **34**. FIG. **5** illustrates a Y-Z section of the ink container cover portion **21***a*. FIG. **5** illustrates the ink container cover portion **21***a* and the ink container **34**. The cyan ink container **34**C is illustrated as an example of the ink container **34** in FIG. **5**. The sectional configuration of the cyan ink container **34**C is the same as the sectional configurations of the black ink container **34**K, the magenta ink container **34**M, and the yellow ink container **34**Y.

The ink container cover portion **21***a* illustrated in FIG. **5** includes the cyan ink amount checking window **25**C and the lighting window **27**. The lighting window **27** is provided at a position on a −Z-direction side of the cyan ink amount checking window **25**C. The ink container cover portion **21***a* and the cyan ink container **34**C are spaced apart from each other in a direction along the Y axis.

The ink container **34** includes the ink amount indicating portion **35**, an ink storage chamber **36** and a gas-liquid exchange port **37**. A buffer chamber **38** is provided under the ink container **34**. The buffer chamber **38** may be configured integrally with the ink container **34** or may be configured separately from the ink container **34**. The gas-liquid exchange port **37** corresponds to an example of a gas-liquid exchange portion. The buffer chamber **38** corresponds to one example of a storage portion. The cyan ink container **34**C, which is an example of the ink container **34**, includes the cyan ink amount indicating portion **35**C, a cyan ink storage chamber **36**C, and a cyan container gas-liquid exchange port **37**C. A cyan ink buffer chamber **38**C is provided under the cyan ink container **34**C.

The ink amount indicating portion **35** is provided at a position facing the ink amount checking window **25**. The ink amount indicating portion **35** is provided at a part of the ink container **34**. The ink amount indicating portion **35** is configured such that the ink L stored in the ink storage chamber **36** is viewable.

The ink storage chamber **36** stores the ink L to be ejected by the printing head **31**. The cyan ink storage chamber **36**C stores the cyan ink LC to be ejected by the printing head **31**. The ink storage chamber **36** communicates with the gas-liquid exchange port **37**. The cyan ink storage chamber **36**C communicates with the cyan container gas-liquid exchange port **37**C.

The gas-liquid exchange port **37** performs gas-liquid exchange. The gas-liquid exchange port **37** is arranged more toward the −Z direction than ejection ports of the printing head **31**. The ejection ports of the printing head **31** are openings of the nozzles that eject the ink L. The gas-liquid exchange port **37** applies, to the ejection ports, a negative pressure of a differential head corresponding to a height between positions where the ejection ports and the gas-liquid exchange port **37** are arranged, along the Z axis. The gas-liquid exchange port **37** has an opening area that can maintain a meniscus of the ink L. The gas-liquid exchange port **37** is provided inside the buffer chamber **38**. The cyan container gas-liquid exchange port **37**C, which is an example of the gas-liquid exchange port **37**, is arranged more toward the −Z direction than the ejection ports of the printing head **31** is. The cyan container gas-liquid exchange port **37**C applies, to the ejection ports, a negative pressure of a differential head corresponding to a height between positions where the ejection ports and the cyan container gas-liquid exchange port **37**C are arranged, along the Z axis. The cyan container gas-liquid exchange port **37**C has an opening area that can maintain a meniscus of the cyan ink LC. The cyan container gas-liquid exchange port **37**C is provided inside the cyan ink buffer chamber **38**C.

The buffer chamber **38** can accommodate the ink L flowing out from the gas-liquid exchange port **37**. When the air in the ink storage chamber **36** expands due to a change in air pressure, temperature, or the like, the meniscus formed in the gas-liquid exchange port **37** may be destroyed. When the meniscus formed in the gas-liquid exchange port **37** is destroyed, the ink L stored in the ink storage chamber **36** flows out to the buffer chamber **38**. The buffer chamber **38** stores the ink L flowing out from the gas-liquid exchange port **37** to prevent the ink L from flowing outside the ink container **34**. The cyan ink buffer chamber **38**C, which is an example of the buffer chamber **38**, can store the cyan ink LC flowing out from the cyan container gas-liquid exchange port **37**C.

The lighting window **27** is provided at a position facing the buffer chamber **38**. The lighting window **27** is provided at a position on a −Y-direction side of the buffer chamber **38**. For example, the lighting window **27** is provided at a position on a −Y-direction-side of the cyan ink buffer chamber **38**C.

The ink container **34** includes the gas-liquid exchange port **37** for gas-liquid exchange. The printer **100** includes the buffer chamber **38** that accommodates the ink L flowing out from the gas-liquid exchange port **37**. The lighting window **27** is provided at a position in the ink container cover portion **21***a*, the position facing the buffer chamber **38**. Since the buffer chamber **38** is provided under the ink storage chamber **36**, the ink amount indicating portion **35** is provided at a level higher than the buffer chamber **38**. The ink amount checking window **25** facing the ink amount indicating portion **35** is provided at a level higher than the buffer chamber **38**. As a result, it is possible to increase the area of the lighting window **27** provided below the ink amount checking window **25**.

The front surface portion of the ink container cover portion **21***a* and the ink container **34** are spaced apart from each other. A space is provided between the ink container cover portion **21***a* and the ink container **34**. The space includes a first interior region that is continuous to the lighting window **27** inside the ink container cover portion **21***a* and a second interior region that is positioned between the ink container cover portion **21***a* and the ink container **34** and above the first interior region. The light taken in through the lighting window **27** can pass through the space. The space will hereinafter be referred to as a light path **63**. The light path **63** is a light passage space through which the light taken in through the lighting window **27** passes. The light path **63** corresponds to an example of an optical path.

The printer **100** includes the printing portion **30** that performs printing by ejecting the ink L onto the printing medium M, the ink container **34** that accommodates the ink L to be ejected by the printing portion **30**, and the cover body **21** that includes the ink container cover portion **21***a* accommodating the ink container **34**. The ink container **34** includes the ink amount indicating portion **35** configured such that the accommodated ink L is viewable. The ink container cover portion **21***a* of the cover body **21** faces the ink amount indicating portion **35**, and includes the ink amount checking window **25** configured such that the ink L is viewable and the lighting window **27** that takes in light from outside the cover body **21**. The printer **100** includes the light path **63** through which the light taken in passes, between the ink container **34** and the ink container cover portion **21***a*. The user can easily view the ink L in the ink container **34** by the light taken in through the lighting window **27**. Since the ink L in the ink container **34** can be easily viewed by the external light, the printer **100** is cost-saving and power efficient.

The printer **100** includes, for an example, the black ink container **34**K that accommodates the black ink LB and the cyan ink container **34**C that accommodates the cyan ink LC. The cyan ink container **34**C includes the cyan ink amount indicating portion **35**C configured such that the accommodated cyan ink LC is viewable. The ink amount checking window **25** includes the black ink amount checking window **25**K facing the black ink amount indicating portion **35**K and the cyan ink amount checking window **25**C facing the cyan ink amount indicating portion **35**C. The lighting window **27** is provided below the black ink amount checking window **25**K and the cyan ink amount checking window **25**C. It becomes easier for the user to view the amount of black ink in the black ink container **34**K and the amount of cyan ink in the cyan ink container **34**C.

A reflecting member **65** is preferably provided in the light path **63**. FIG. **5** illustrates a configuration in which a first reflecting plate **65***a* is provided in the light path **63**. The first reflecting plate **65***a* is an example of the reflecting member **65**. The first reflecting plate **65***a* reflects the light taken in through the lighting window **27** to the second interior region in the +Z direction. The first reflecting plate **65***a* reflects the light to the ink amount indicating portion **35**. The first reflecting plate **65***a* reflects the light to the second interior region, so that it becomes easier for the user to view the ink amount indicating portion **35**. The reflecting member **65** corresponds to an example of a reflecting portion.

The printer **100** includes the first reflecting plate **65***a* that is provided in the light path **63** and reflects the light, and the first reflecting plate **65***a* reflects the light to the ink amount indicating portion **35**. Since the first reflecting plate **65***a* is provided, it becomes easier for the user to view the ink amount indicating portion **35**.

A second reflecting plate **65***b* may be provided as the reflecting member **65** in the light path **63**. FIG. **6** illustrates a schematic configuration inside the ink container cover portion **21***a*. FIG. **6** illustrates the members arranged in the first interior region of the light path **63** that is continuous to the lighting window **27**. FIG. **6** illustrates the first reflecting plate **65***a* and the second reflecting plate **65***b*. The first reflecting plate **65***a* reflects the light taken in through the lighting window **27** in the +Z direction. The second reflecting plate **65***b* reflects the light taken in through the lighting window **27** in the +X direction. The second reflecting plate **65***b* reflects the light toward the paper feed cassette **40**. Although FIG. **6** illustrates the first reflecting plate **65***a* and the second reflecting plate **65***b*, the present disclosure is not limited to this configuration. The printer **100** may include any one of the first reflecting plate **65***a* and the second reflecting plate **65***b*. The printer **100** preferably includes the first reflecting plate **65***a* and the second reflecting plate **65***b*.

FIG. **7** illustrates a schematic configuration of the ink container cover portion **21***a*. FIG. **7** illustrates a +X-direction side surface and a front surface of the ink container cover portion **21***a*. The front surface of the ink container cover portion **21***a* includes the ink amount checking window **25** and the lighting window **27**. The ink amount checking window **25** includes the black ink amount checking window **25**K, the cyan ink amount checking window **25**C, the magenta ink amount checking window **25**M, and the yellow ink amount checking window **25**Y.

The +X-direction side surface of the ink container cover portion **21***a* includes a cover portion opening **29**. The +X-direction side surface of the ink container cover portion **21***a* is a side surface facing the paper feed cassette **40**. The cover portion opening **29** is provided at a position facing the paper feed cassette **40**. The cover portion opening **29** is provided at a position coupled to the light path **63**. The cover portion opening **29** corresponds to an example of an exterior opening.

FIG. **8** illustrates a partially enlarged configuration of the paper feed cassette **40**. A portion of the paper feed cassette **40** illustrated in FIG. **8** includes a region adjacent to the +X-direction side surface of the ink container cover portion **21***a*. FIG. **8** illustrates a cassette front surface **40**F, a cassette side surface **40**S, a cassette top surface **40**T, a cassette front opening **41**, and a cassette side opening **42**.

The cassette front surface **40**F is a −Y-direction side surface of the paper feed cassette **40**. The cassette front surface **40**F is a side surface disposed in a direction in which the paper feed cassette **40** is pulled out. When the paper feed cassette **40** is mounted on the printer **100**, the cassette front surface **40**F constitutes a part of the front surface of the printer **100**. The cassette front opening **41** is formed in the cassette front surface **40**F. The cassette front surface **40**F corresponds to an example of a first surface.

The cassette side surface **40**S is a −X-direction side surface of the paper feed cassette **40**. The cassette side surface **40**S faces the +X-direction side surface of the ink container cover portion **21***a*. The cassette side opening **42** is formed in the cassette side surface **40**S.

The cassette top surface **40**T is a +Z-direction surface of the paper feed cassette **40**. When the paper feed cassette **40** is mounted on the printer **100**, a region of the cassette top surface **40**T that is coupled to the cassette front surface **40**F may be arranged at a position that can be viewed by the user.

The cassette front opening **41** is configured such that the printing medium M accommodated inside the paper feed cassette **40** can be viewed by the user. The cassette front opening **41** is provided in the cassette front surface **40**F. The cassette front opening **41** illustrated in FIG. **8** is provided at a position on a −X-direction side of the cassette front surface **40**F. The cassette front opening **41** is provided in a region adjacent to the ink container cover portion **21***a*. The cassette front opening **41** corresponds to an example of a medium viewing portion.

The cassette side opening **42** is provided in the cassette side surface **40**S. When the paper feed cassette **40** is mounted on the printer **100**, the cassette side opening **42** faces the cover portion opening **29**. The cassette side opening **42** allows the light passing through the light path **63** to pass into the paper feed cassette **40** through the cover portion opening **29**. The cassette side opening **42** corresponds to an example of a member opening.

FIG. **9** illustrates a relationship between the paper feed cassette **40** and the ink container cover portion **21***a*. FIG. **9** illustrates a part of a front view of the printer **100**. FIG. **9** illustrates a part of the paper feed cassette **40** and a part of the ink container cover portion **21***a*. The configuration of the ink container cover portion **21***a* illustrated in FIG. **9** is the same as the configuration of the ink container cover portion **21***a* illustrated in FIG. **4**.

The paper feed cassette **40** is arranged at a position adjacent to the ink container cover portion **21***a* in the +X direction. The cassette front opening **41** is arranged at a position on a +X-direction side of the lighting window **27**. The light path **63** (not illustrated) is provided inside the ink container cover portion **21***a* on a +Y-direction side of the lighting window **27**.

FIG. **9** illustrates a first virtual line VL**1**, a second virtual line VL**2**, and a virtual range VA. The first virtual line VL**1** is a virtual line passing through an upper end of the lighting window **27** and extending in the +X direction. The second virtual line VL**2** is a virtual line passing through a lower end of the lighting window **27** and extending in the +X direction. The virtual range VA is a region between the first virtual line VL**1** and the second virtual line VL**2**.

The cover portion opening **29** is provided at a position that includes at least a part of the virtual range VA. The cassette side opening **42** is provided at a position that includes at least a part of the virtual range VA. The cover portion opening **29** and the cassette side opening **42** are provided at positions at least partially overlap each other. The cover portion opening **29** and the cassette side opening **42** are arranged at positions through which the light passing through the light path **63** can pass. The light path **63** communicates with the cassette side opening **42** through the cover portion opening **29**.

The cassette front opening **41** is provided at a position that includes at least a part of the virtual range VA. Therefore, the lighting window **27** and the cassette front opening **41** overlap in the +Z direction when the user views from the −X direction. The position in the −X direction is a position facing the cover portion opening **29**.

The printer **100** includes the paper feed cassette **40** that accommodates the printing medium M. The ink container cover portion **21***a* includes the cover portion opening **29** that faces the paper feed cassette **40**. The paper feed cassette **40** includes the cassette side opening **42** facing the cover portion opening **29** and the cassette front opening **41** configured such that the accommodated printing media M is viewable. The light path **63** communicates with the cassette side opening **42** through the cover portion opening **29**. The user can easily view the amount of ink in the ink container **34** and the printing medium M accommodated in the paper feed cassette **40** by the light taken in through the lighting window **27**.

The lighting window **27** and the cassette front opening **41** preferably overlap each other in the +Z direction when viewed from a position facing the cover portion opening **29** by the user. When the light taken in through the lighting window **27** passes through the light path **63** toward the cassette front opening **41**, a decrease in the amount of light is suppressed.

FIG. **10** illustrates a path along which the light taken in through the lighting window **27** travels toward the paper feed cassette **40**. FIG. **10** illustrates an X-Y section including a part of the paper feed cassette **40** and a part of the ink container cover portion **21***a*. The second reflecting plate **65***b* is provided inside the ink container cover portion **21***a*. The second reflecting plate **65***b* is provided in the light path **63**.

As illustrated in FIG. **10**, the cover portion opening **29** and the cassette side opening **42** are provided at positions facing each other. The cover portion opening **29** is provided inside the light path **63**. The light path **63** communicates with the cassette side opening **42** through the cover portion opening **29**.

The light taken in through the lighting window **27** is incident on the light path **63** provided inside the ink container cover portion **21***a*. The incident light is reflected toward the cover portion opening **29** by the second reflecting plate **65***b* provided in the light path **63**. The reflected light passes through the cover portion opening **29** and the cassette side opening **42** and is incident on the paper feed cassette **40**. The light incident on the paper feed cassette **40** makes it easier for the user to view the printing medium M accommodated in the paper feed cassette **40** through the cassette front opening **41**.

The printer **100** includes the printing portion **30** that performs printing by ejecting the ink L onto the printing medium M, the ink container **34** that accommodates the ink L to be ejected by the printing portion **30**, the cover body **21** that includes the ink container cover portion **21***a* accommodating the ink container **34**, and the paper feed cassette **40** that includes the cassette front opening **41** configured such that the printing medium M is viewable and accommodates the printing medium M. The ink container cover portion **21***a* includes the lighting window **27** that takes in light from outside the cover body **21** and the cover portion opening **29** that faces the paper feed cassette **40**. The light path **63** through which the light taken in through the lighting window **27** passes is provided inside the ink container cover portion **21***a*. The paper feed cassette **40** includes the cassette side opening **42** facing the cover portion opening **29**. The light path **63** communicates with the cassette side opening **42** through the cover portion opening **29**. The light taken in through the lighting window **27** makes it easier for the user to view the printing medium M accommodated in the paper feed cassette **40** through the cassette front opening **41**. Since the ink L in the ink container **34** can be easily viewed by the external light, the printer **100** is cost-saving and power efficient.

The printer **100** includes the second reflecting plate **65***b* that is provided in the light path **63** and reflects light. The second reflecting plate **65***b* reflects light to the cover portion opening **29**. Since the second reflecting plate **65***b* is provided, the amount of light incident on the paper feed cassette **40** increases, which makes it easier for the user to view the printing medium M accommodated in the paper feed cassette **40**.

The cassette front opening **41** may extend to the cassette top surface **40**T. FIG. **11** illustrates a schematic configuration of the paper feed cassette **40**. The paper feed cassette **40** illustrated in FIG. **11** includes the cassette front opening **41** extending to the cassette top surface **40**T.

When the paper feed cassette **40** is mounted on the printer **100**, the region of the cassette top surface **40**T that is coupled to the cassette front surface **40**F is arranged at a position that can be viewed by the user. A top surface opening **41**T that communicates with the cassette front opening **41** formed in the cassette front surface **40**F is formed in the cassette top surface **40**T illustrated in FIG. **11**. The top surface opening **41**T constitutes a part of the cassette front opening **41**. The cassette top surface **40**T corresponds to an example of a second surface.

The paper feed cassette **40** includes the cassette front surface **40**F disposed in a direction in which the paper feed cassette **40** is pulled out and the cassette top surface **40**T included in an upper surface. The cassette front opening **41** is provided in the cassette front surface **40**F and the cassette top surface **40**T. Since the cassette front opening **41** is provided in the cassette front surface **40**F and the cassette top surface **40**T, it becomes easier for the user to view the printing medium M accommodated in the paper feed cassette **40**. In addition, since the external light can be taken in through the top surface opening **41**T, it becomes easier for the user to view the printing medium M accommodated in the paper feed cassette **40**.

An inner surface of the paper feed cassette **40** is preferably surface-treated. FIG. **12** illustrates a schematic configuration of the paper feed cassette **40**. FIG. **12** illustrates the cassette front surface **40**F, the cassette top surface **40**T, a cassette bottom surface **40**B, the cassette side surface **40**S, the cassette front opening **41**, and the cassette side opening **42**. FIG. **12** illustrates an inner surface of the cassette side surface **40**S that is adjacent to the ink container cover portion **21***a* inside the paper feed cassette **40**.

The printing medium M is mounted on the cassette bottom surface **40**B. The printing media M of various sizes are mounted on the cassette bottom surface **40**B. The cassette bottom surface **40**B may include a guide member that guides the printing medium M to an end surface position. The guide member is not illustrated.

Inner surfaces of the cassette bottom surface **40**B, the cassette front surface **40**F, and the cassette side surface **40**S inside the paper feed cassette **40** constitute a cassette inner peripheral surface. The cassette inner peripheral surface corresponds to an example of an inner surface of the medium accommodation portion. At least a part of the cassette inner peripheral surface is preferably subjected to mirror-finishing as a surface treatment. Since the mirror-finishing is performed on at least a part of the cassette inner peripheral

surface, the light incident on the paper feed cassette **40** is less likely to be attenuated. As a result, it becomes easier for the user to view the printing medium M accommodated in the paper feed cassette **40**.

At least a part of the cassette inner peripheral surface of the paper feed cassette **40** is subjected to mirror-finishing. Since the mirror-finishing is performed on the cassette inner peripheral surface, it becomes easier for the user to view the printing medium M accommodated in the paper feed cassette **40**.

The cassette inner peripheral surface may be coated with white paint as the surface treatment. Since the cassette inner peripheral surface is coated with white paint, attenuation of light incident on the paper feed cassette **40** is suppressed. Further, the cassette inner peripheral surface, particularly the cassette bottom surface **40**B, may be coated with black paint as the surface treatment. Since the cassette inner peripheral surface is coated with black paint, a color difference between the printing medium M and the cassette inner peripheral surface increases. The contrast makes it easier for the user to view the printing medium M.

A paper discharge tray lower surface **60***a* of the printer **100** may be surface-treated. FIG. **13** illustrates a schematic configuration of the printer **100** with the paper feed cassette **40** removed. FIG. **13** illustrates a schematic configuration of the printer **100** that includes the paper discharge tray lower surface **60***a*.

The paper discharge tray lower surface **60***a* is a −Z-direction surface of the paper discharge tray **60** and faces the paper feed cassette **40**. The paper discharge tray lower surface **60***a* faces the printing medium M accommodated in the paper feed cassette **40** at least in a closed state. The paper discharge tray lower surface **60***a* constitutes a part of the cassette inner peripheral surface at least in the closed state. The paper discharge tray lower surface **60***a* may be surface-treated.

The paper discharge tray lower surface **60***a* is preferably subjected to mirror-finishing as the surface treatment. Since the mirror-finishing is performed on the paper discharge tray lower surface **60***a*, the light incident on the paper feed cassette **40** is less likely to be attenuated. As a result, it becomes easier for the user to view the printing medium M accommodated in the paper feed cassette **40**.

The paper discharge tray lower surface **60***a* may be coated with white paint for the surface treatment. Since the paper discharge tray lower surface **60***a* is coated with white paint, attenuation of light incident on the paper feed cassette **40** is suppressed.

A bottom cover portion that is a part of the cover body **21** may be provided between the paper discharge tray **60** and the paper feed cassette **40**. In this case, a lower surface of the bottom cover portion faces the printing medium M accommodated in the paper feed cassette **40**. Further, the lower surface of the bottom cover portion constitutes a part of the cassette inner peripheral surface. At this time, the lower surface of the bottom surface cover portion may be surface-treated.

The bottom cover portion may be subjected to mirror-finishing or coated with white paint as the surface treatment. These surface treatments also provide the same effect as that obtained when the surface treatment is performed on the paper discharge tray lower surface **60***a*.

A light source that emits light may be provided in the light path **63**. FIG. **14** illustrates a configuration in which the light source is provided in the light path **63**. FIG. **14** illustrates a configuration in which a light emitting diode (LED) **71** is provided in the light path **63**. The LED **71** is an example of the light source and corresponds to an example of an illumination portion.

FIG. **14** illustrates a configuration in which the LED **71** is provided in the light path **63** continuous to the lighting window **27**. The LED **71** illuminates the light path **63** formed inside the ink container cover portion **21***a*. The LED **71** illuminates the light path **63** between the ink container cover portion **21***a* and the ink container **34**. The LED **71** illuminates the ink amount indicating portion **35** of the ink container **34**. In FIG. **14**, three LEDs **71** are arranged in the light path **63**. The three LEDs **71** are arranged along the X axis. The number of LEDs **71** is not limited to three. One or more LEDs **71** may be arranged in the light path **63**. The position of the LED **71** is not limited to the position of LED **71** illustrated in FIG. **14**. The LED **71** is preferably arranged at a position where the ink amount indicating portion **35** viewed through the ink amount checking window **25** can be easily viewed by the user. The LED **71** is preferably arranged at a position where the printing medium M viewed through the cassette front opening **41** can be easily viewed by the user.

A light bulb (not illustrated) may be provided in the light path **63** continuous to the lighting window **27** instead of the LED **71**. The light bulb illuminates the light path **63** formed inside the ink container cover portion **21***a*. The light bulb illuminates the light path **63** between the ink container cover portion **21***a* and the ink container **34**. The light bulb illuminates the ink amount indicating portion **35** of the ink container **34**. The number of light bulbs is not limited to one. A plurality of light bulbs may be arranged in the light path **63**. The position of the light bulb is not limited to the position of the LED **71** illustrated in FIG. **14**. The light bulb is preferably arranged at a position where the ink amount indicating portion **35** viewed through the ink amount checking window **25** can be easily viewed by the user. The light bulb is preferably arranged at a position where the printing medium M viewed through the cassette front opening **41** can be easily viewed by the user. The light bulb corresponds to an example of the illumination portion.

As described above, the printer **100** preferably includes the light source that is provided in the light path **63** and emits light. Since the light source is provided in the light path **63**, the user can easily view the amount of ink stored in the ink container **34**. Further, it becomes easier for the user to view the printing medium M accommodated in the paper feed cassette **40**.

The printer **100** may include a light guide member **80** that guides light to the ink container **34**. FIGS. **15** and **16** illustrate a configuration of the light guide member **80**. FIGS. **17**, **18**, **19**, **20**, **21**, and **22** illustrate a relationship between the amount of ink stored in the ink container **34** and the light guide member **80**. The light guide member **80** corresponds to an example of a light guide portion.

FIG. **15** illustrates the ink container **34** including the light guide member **80**. FIG. **15** illustrates the magenta ink container **34**M as an example of the ink container **34**. The black ink container **34**K, the cyan ink container **34**C, and the yellow ink container **34**Y may have the same configuration as the magenta ink container **34**M illustrated in FIG. **15**.

The ink container **34** illustrated in FIG. **15** includes the light guide member **80**. The light guide member **80** is provided inside the light path **63** and the ink container **34**. The light guide member **80** is provided at a position on a +Y-direction side of the ink amount indicating portion **35**. The light guide member **80** is provided inside the ink storage chamber **36**. The magenta ink container **34**M, which is an

example of the ink container **34**, includes a magenta ink light guide member **80**M. The magenta ink light guide member **80**M is provided inside the light path **63** and the magenta ink container **34**M. The magenta ink light guide member **80**M is provided at a position on a +Y-direction side of the magenta ink amount indicating portion **35**M. The magenta ink light guide member **80**M is provided inside a magenta ink storage chamber **36**M. Note that the light guide member **80** may be provided only inside the ink container **34**.

FIG. **16** illustrates a schematic configuration of the light guide member **80**. One end of the light guide member **80** is provided in the light path **63**. The other end of the light guide member **80** is provided inside the ink storage chamber **36** of the ink container **34**. The light guide member **80** includes a light entrance portion **81**, a first light emission portion **83**, a second light emission portion **85**, a third light emission portion **87**, and a fourth light emission portion **89**. The light guide member **80** illustrated in FIG. **16** includes four light emission portions, but is not limited thereto. It is sufficient if the light guide member **80** includes one or more light emission portions. One or more light emission portions are provided at positions spaced apart from the ink amount indicating portion **35**. One end of the magenta ink light guide member **80**M, which is an example of the light guide member **80**, is provided in the light path **63**. The other end of the magenta ink light guide member **80**M is provided inside the magenta ink storage chamber **36**M of the magenta ink container **34**M. The magenta ink light guide member **80**M includes a magenta ink light entrance portion **81**M, a magenta ink first light emission portion **83**M, a magenta ink second light emission portion **85**M, a magenta ink third light emission portion **87**M, and a magenta ink fourth light emission portion **89**M. The configuration of the magenta ink light guide member **80**M is the same as the configuration of the light guide member **80**, and details thereof are described in the description of the light guide member **80**.

Light enters the inside of the light guide member **80** through the light entrance portion **81**. The light entrance portion **81** constitutes one end of the light guide member **80**. The light entrance portion **81** is arranged at a lower end of the light guide member **80** in the −Z direction. The light entrance portion **81** is provided in the light path **63**. The light passing through the light path **63** enters the light guide member **80** through the light entrance portion **81**.

The first light emission portion **83** emits the light that has entered through the light entrance portion **81**. The first light emission portion **83** constitutes the other end of the light guide member **80**. The first light emission portion **83** is provided above the light entrance portion **81**. The first light emission portion **83** is provided at the top of the plurality of light emission portions. The first light emission portion **83** faces the ink amount indicating portion **35**.

The second light emission portion **85** emits the light that has entered through the light entrance portion **81**. The second light emission portion **85** is provided below the first light emission portion **83**. The second light emission portion **85** is provided above the light entrance portion **81**. The second light emission portion **85** is provided at a position along the Z axis between the first light emission portion **83** and the light entrance portion **81**. The second light emission portion **85** faces the ink amount indicating portion **35**.

The third light emission portion **87** emits the light that has entered through the light entrance portion **81**. The third light emission portion **87** is provided below the second light emission portion **85**. The third light emission portion **87** is provided above the light entrance portion **81**. The third light emission portion **87** is provided at a position along the Z axis between the second light emission portion **85** and the light entrance portion **81**. The third light emission portion **87** faces the ink amount indicating portion **35**.

The fourth light emission portion **89** emits the light that has entered through the light entrance portion **81**. The fourth light emission portion **89** is provided below the third light emission portion **87**. The fourth light emission portion **89** is provided above the light entrance portion **81**. The fourth light emission portion **89** is provided at a position along the Z axis between the third light emission portion **87** and the light entrance portion **81**. The fourth light emission portion **89** faces the ink amount indicating portion **35**.

FIGS. **17** and **18** illustrate the ink container **34** in which the ink L is stored at a first water level WL**1**. FIG. **17** illustrates a Y-Z section of the ink container **34** in which the ink L is stored at the first water level WL**1**. FIG. **18** illustrates an X-Z section of the ink container **34** in which the ink L is stored at the first water level WL**1**. FIG. **18** illustrates an X-Z section between the ink amount indicating portion **35** and the light guide member **80**. FIGS. **17** and **18** illustrate the magenta ink container **34**M that stores the magenta ink LM which is an example of the ink L. Details are described in the description of the ink container **34** and the light guide member **80**.

As illustrated in FIGS. **17** and **18**, in the ink container **34**, the ink L is stored at the first water level WL**1**. The first water level WL**1** is, for example, a water level when the maximum amount of ink L is stored in the ink container **34**. When the ink L is stored at the first water level WL**1** in the ink container **34**, the first light emission portion **83**, the second light emission portion **85**, the third light emission portion **87**, and the fourth light emission portion **89** of the light guide member **80** are positioned in the ink L. The light emitted by the first light emission portion **83**, the second light emission portion **85**, the third light emission portion **87**, and the fourth light emission portion **89** does not reach the ink amount indicating portion **35** due to the stored ink L. Alternatively, even when the light emitted by the first light emission portion **83**, the second light emission portion **85**, the third light emission portion **87**, and the fourth light emission portion **89** reaches the ink amount indicating portion **35**, the amount of light is smaller than that when there is no ink L. The user cannot view the light emitted by the first light emission portion **83**, the second light emission portion **85**, the third light emission portion **87** and the fourth light emission portion **89**. Alternatively, it is difficult for the user to view the light emitted by the first light emission portion **83**, the second light emission portion **85**, the third light emission portion **87**, and the fourth light emission portion **89**. The user can confirm that the water level of the ink L stored in the ink container **34** is the first water level WL**1** by viewing the ink amount indicating portion **35**.

FIGS. **19** and **20** illustrate the ink container **34** in which the ink L is stored at a second water level WL**2**. FIG. **19** illustrates a Y-Z section of the ink container **34** in which the ink L is stored at the second water level WL**2**. The second water level WL**2** is, for example, a water level when a half of the maximum amount of ink L is stored in the ink container **34**. FIG. **20** illustrates an X-Z section of the ink container **34** in which the ink L is stored at the second water level WL**2**. FIG. **20** illustrates an X-Z section between the ink amount indicating portion **35** and the light guide member **80**. FIGS. **19** and **20** illustrate the magenta ink container **34**M that stores the magenta ink LM which is an example of the ink L. Details are described in the description of the ink container **34** and the light guide member **80**.

As illustrated in FIGS. **19** and **20**, in the ink container **34**, the ink L is stored at the second water level WL**2**. When the ink L is stored at the second water level WL**2** in the ink container **34**, the first light emission portion **83** and the second light emission portion **85** of the light guide member **80** are positioned above the second water level WL**2**. The first light emission portion **83** and the second light emission portion **85** are exposed. The third light emission portion **87** and the fourth light emission portion **89** are positioned within the ink L. The light emitted by the first light emission portion **83** and the second light emission portion **85** can be viewed through the ink amount indicating portion **35**. The light emitted by the third light emission portion **87** and the fourth light emission portion **89** does not reach the ink amount indicating portion **35** due to the stored ink L. Alternatively, even when the light emitted by the third light emission portion **87** and the fourth light emission portion **89** reaches the ink amount indicating portion **35**, the amount of light is smaller than that when there is no ink L. The user can view the light emitted by the first light emission portion **83** and the second light emission portion **85**. The user cannot view the light emitted by the third light emission portion **87** and the fourth light emission portion **89**. Alternatively, it is difficult for the user to view the light emitted by the third light emission portion **87** and the fourth light emission portion **89**. The user can confirm that the water level of the ink L stored in the ink container **34** is the second water level WL**2** by viewing the ink amount indicating portion **35**.

FIGS. **21** and **22** illustrate the ink container **34** in which the ink L is stored at a third water level WL**3**. FIG. **21** illustrates a Y-Z section of the ink container **34** in which the ink L is stored at the third water level WL**3**. The third water level WL**3** is, for example, a water level when replenishing with the ink L is necessary. FIG. **22** illustrates an X-Z section of the ink container **34** in which the ink L is stored at the third water level WL**3**. FIG. **22** illustrates an X-Z section between the ink amount indicating portion **35** and the light guide member **80**. FIGS. **21** and **22** illustrate the magenta ink container **34**M that stores the magenta ink LM which is an example of the ink L. Details are described in the description of the ink container **34** and the light guide member **80**.

As illustrated in FIGS. **21** and **22**, in the ink container **34**, the ink L is stored at the third water level WL**3**. When the ink L is stored at the third water level WL**3** in the ink container **34**, the first light emission portion **83**, the second light emission portion **85**, the third light emission portion **87**, and the fourth light emission portion **89** of the light guide member **80** are positioned below the third water level WL**3**. The light emitted by the first light emission portion **83**, the second light emission portion **85**, the third light emission portion **87**, and the fourth light emission portion **89** can be viewed through the ink amount indicating portion **35**. The user can view the light emitted by the first light emission portion **83**, the second light emission portion **85**, the third light emission portion **87** and the fourth light emission portion **89**. The user can confirm that the water level of the ink L stored in the ink container **34** is the third water level WL**3** by viewing the ink amount indicating portion **35**. When the amount of ink L at the third water level WL**3** is set to a predetermined ink near-end amount or an ink end amount, the user can confirm that replenishing with the ink L is necessary.

The printer **100** preferably includes the light guide member **80** that guides light to the ink container **34**. The user can confirm the water level of the ink L stored in the ink container **34** by viewing the ink amount indicating portion **35**.

The light emission portion of the light guide member **80** may be in contact with the ink amount indicating portion **35** instead of being spaced apart from the ink amount indicating portion **35**. With such a configuration, it is possible to check the light emission portion regardless of the amount of ink. Further, the light guide member **80** may be provided at a position on a −Y-direction side of the ink amount indicating portion **35**. That is, the light guide member **80** may be provided outside the ink container **34**. With such a configuration, it is possible to clearly view the light from the light emission portion.

What is claimed is:

1. A recording apparatus comprising:

a recording portion that performs recording by ejecting a liquid onto a medium;

a liquid accommodation portion that accommodates the liquid to be ejected by the recording portion; and

a housing that includes an accommodation portion exterior that accommodates the liquid accommodation portion,

wherein the liquid accommodation portion includes a viewing region configured that the liquid accommodated is viewed,

the accommodation portion exterior of the housing includes

a viewing portion that faces the viewing region and is configured that the liquid is viewed, and

a lighting portion that takes in light from outside the housing, and

an optical path, through which the light taken in passes, is provided between the liquid accommodation portion and the accommodation portion exterior,

wherein the optical path includes a continuous void that extends from the lighting portion through a region sandwiched between the viewing portion and the viewing region.

2. The recording apparatus according to claim **1**, wherein the lighting portion is provided below the viewing portion.

3. The recording apparatus according to claim **2**, wherein the liquid accommodation portion includes

a gas-liquid exchange portion that performs gas-liquid exchange, and

a storage portion configured to accommodate the liquid flowing out from the gas-liquid exchange portion, and

the lighting portion is provided at a position in the accommodation portion exterior, the position facing the storage portion.

4. The recording apparatus according to claim **1**, further comprising a reflecting portion that is provided in the optical path and reflects the light,

wherein the reflecting portion reflects the light to the viewing region.

5. The recording apparatus according to claim **1**, further comprising an illumination portion that is provided in the optical path and emits light.

6. The recording apparatus according to claim **1**, further comprising a light guide portion that guides the light to the liquid accommodation portion.

7. The recording apparatus according to claim **2**, further comprising a second liquid accommodation portion that accommodates a second liquid,

wherein the second liquid accommodation portion includes a second viewing region configured that the accommodated second liquid is viewed,

the viewing portion includes a first region that faces the viewing region and a second region that faces the second viewing region, and

the lighting portion is provided below the first region and the second region.

8. The recording apparatus according to claim **1**, further comprising a medium accommodation portion that accommodates the medium,

wherein the accommodation portion exterior includes an exterior opening that faces the medium accommodation portion,

the medium accommodation portion includes

a member opening that faces the exterior opening, and

a medium viewing portion configured that the accommodated medium is viewed, and

the optical path communicates with the member opening through the exterior opening.

9. A recording apparatus comprising:

a recording portion that performs recording by ejecting a liquid onto a medium;

a liquid accommodation portion that accommodates the liquid to be ejected by the recording portion;

a housing that includes an accommodation portion exterior that accommodates the liquid accommodation portion; and

a medium accommodation portion that includes a medium viewing portion configured that the medium is viewed and that accommodates the medium,

wherein the accommodation portion exterior includes a lighting portion that takes in light from outside the housing and an exterior opening that faces the medium accommodation portion,

an optical path, through which the light taken in through the lighting portion passes, is provided inside the accommodation portion exterior,

the medium accommodation portion includes a member opening that faces the exterior opening, and

the optical path communicates with the member opening through the exterior opening.

10. The recording apparatus according to claim **9**, further comprising a reflecting portion that is provided in the optical path and reflects the light,

wherein the reflecting portion reflects the light to the exterior opening.

11. The recording apparatus according to claim **9**, wherein the medium accommodation portion includes a first surface disposed in a direction in which the medium accommodation portion is pulled out and a second surface included in an upper surface, and

the medium viewing portion is provided in the first surface and the second surface.

12. The recording apparatus according to claim **9**, wherein the lighting portion and the medium viewing portion overlap each other in a vertical direction when viewed from a position facing the exterior opening.

13. The recording apparatus according to claim **9**, wherein at least a part of an inner surface of the medium accommodation portion is mirror-finished.

14. The recording apparatus according to claim **9**, wherein the liquid accommodation portion includes

a gas-liquid exchange portion that performs gas-liquid exchange, and

a storage portion that is configured to accommodate the liquid flowing out from the gas-liquid exchange portion, and

the lighting portion is provided at a position in the accommodation portion exterior, the position facing the storage portion.

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