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Nakamura et al.(10) **Pub. No.: US 2012/0161381 A1**(43) **Pub. Date: Jun. 28, 2012**(54) **RECORDING MEDIA CASSETTE,
RECORDING APPARATUS**(30) **Foreign Application Priority Data**

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(52) **U.S. Cl.** **271/9.11; 271/145**(73) Assignee: **SEIKO EPSON
CORPORATION**, Tokyo (JP)(57) **ABSTRACT**

A recording media cassette includes a lower tray that stores recording media therein, and an upper tray that stores recording media therein and is mounted on the lower tray so as to be detachable from the lower tray.

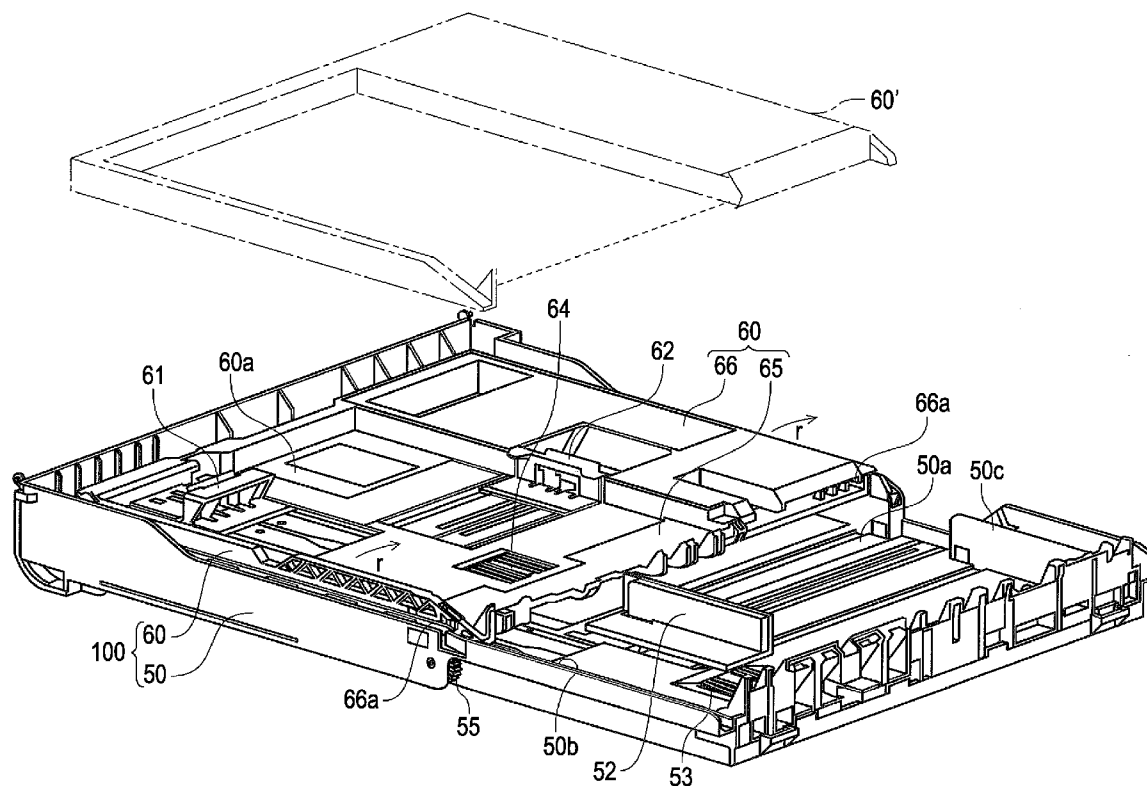
(21) Appl. No.: **13/316,886**(22) Filed: **Dec. 12, 2011**

FIG. 1

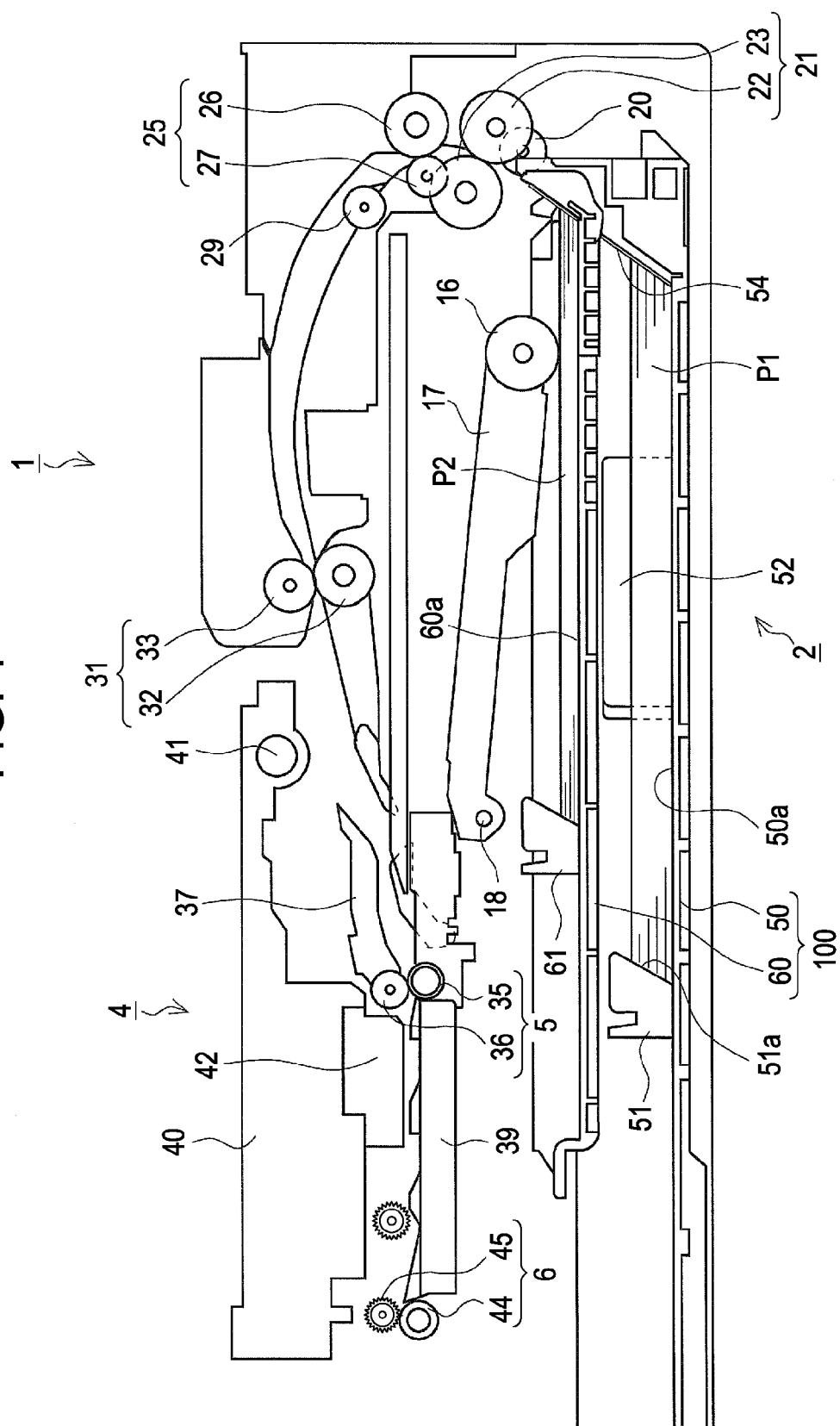


FIG. 2

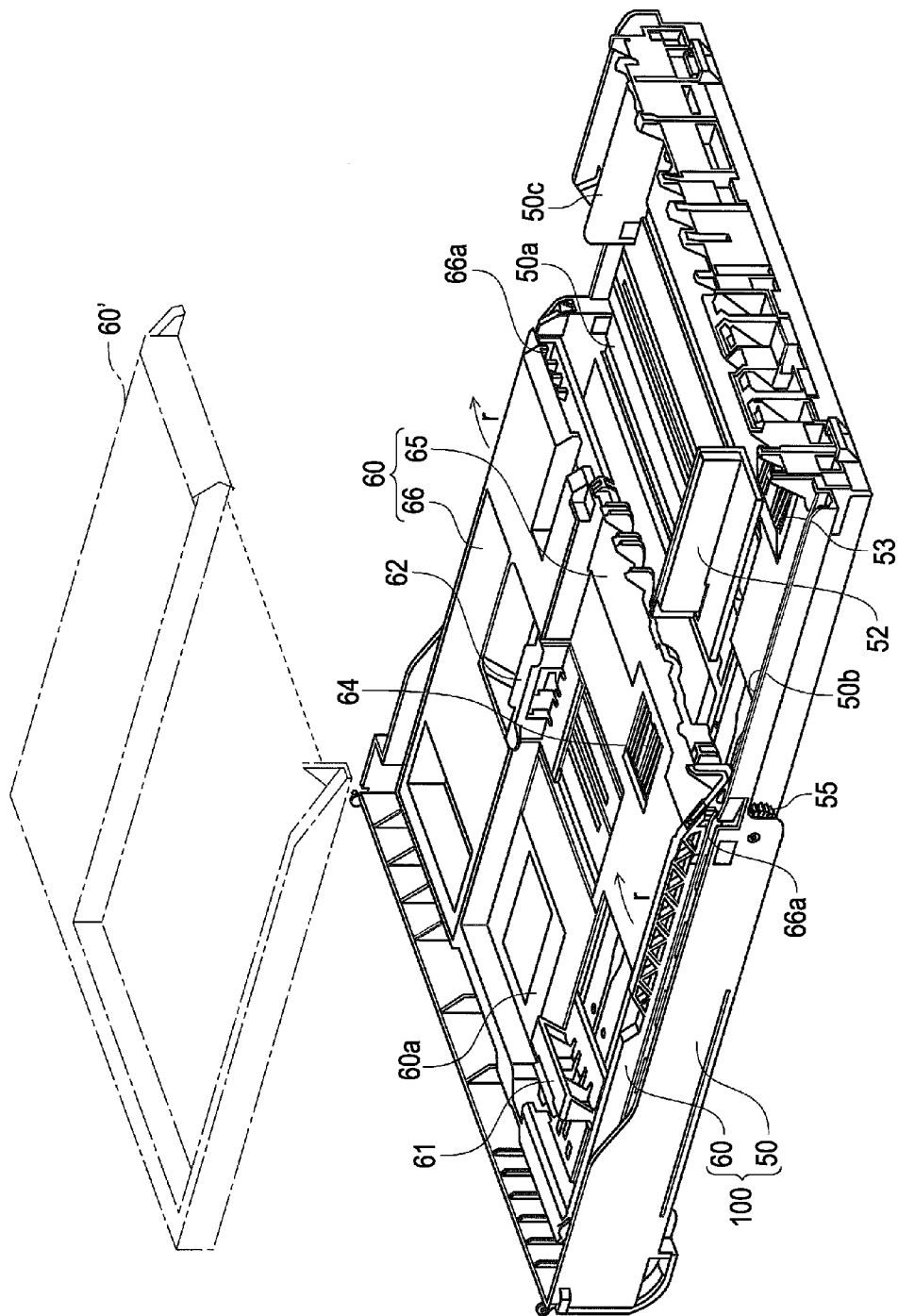


FIG. 3

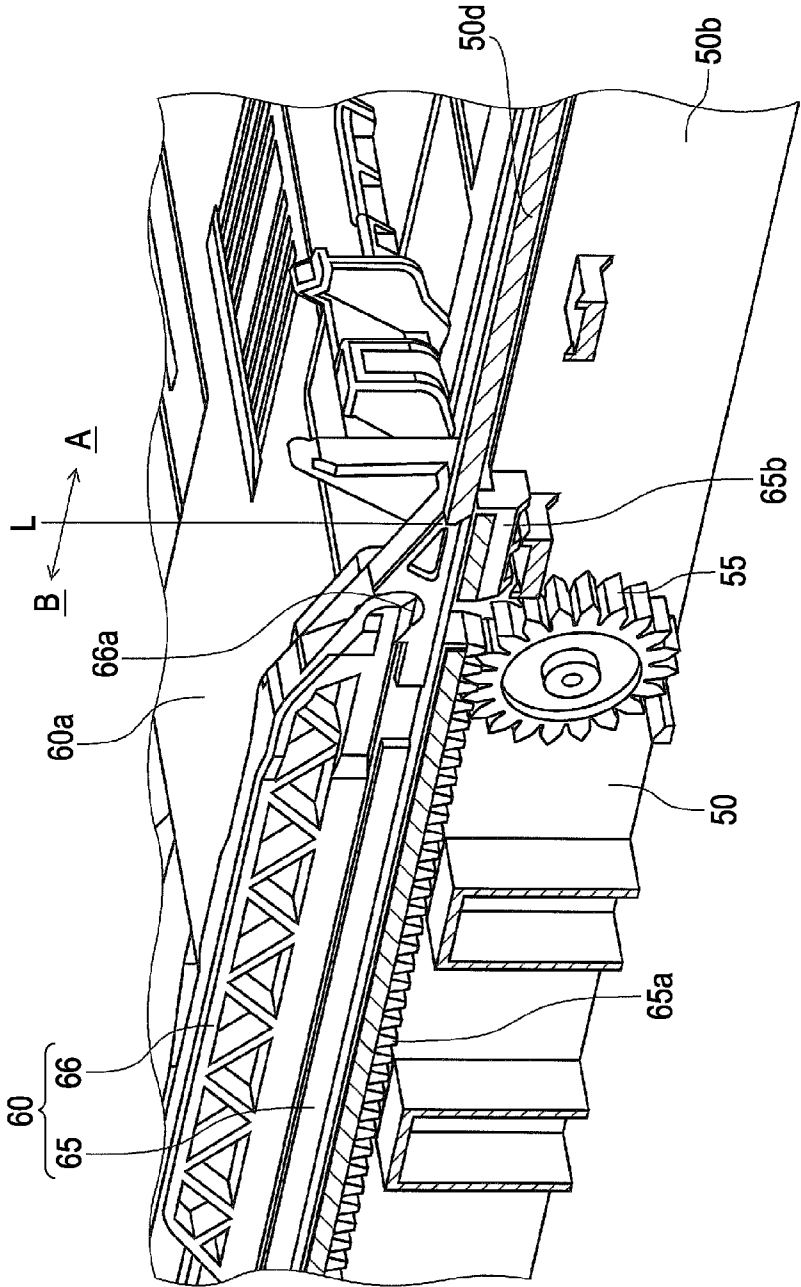


FIG. 4A

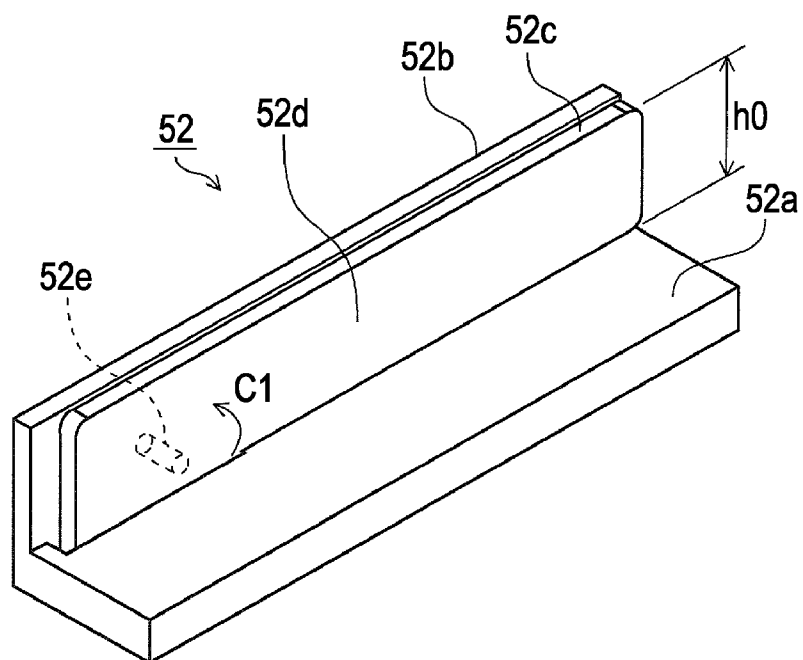


FIG. 4B

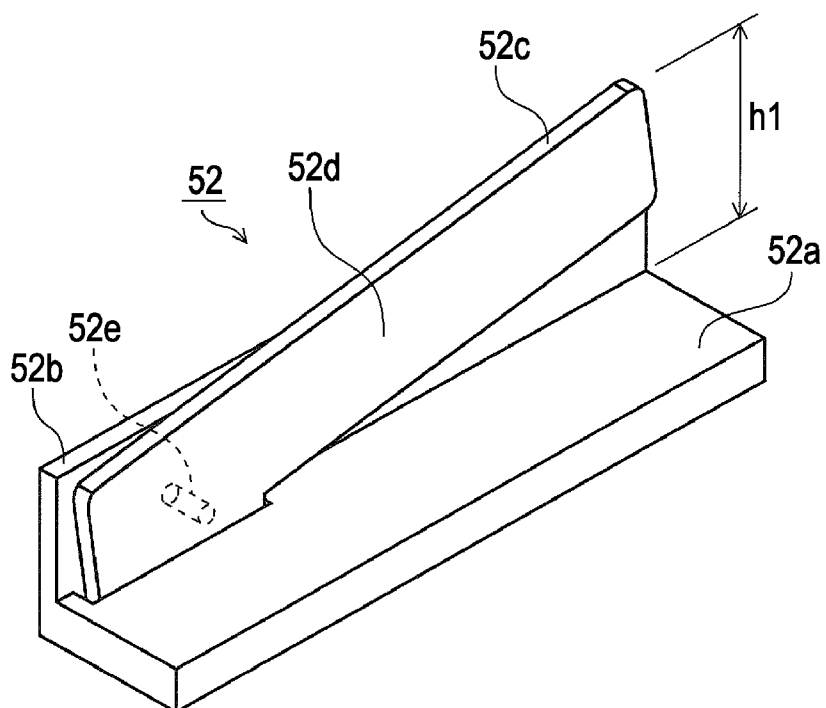


FIG. 5A

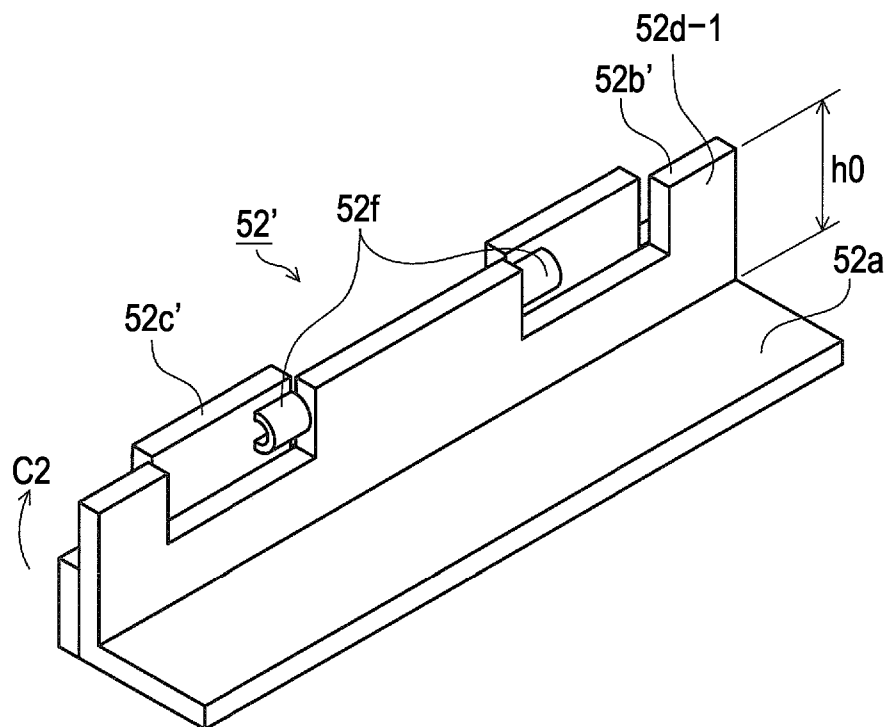
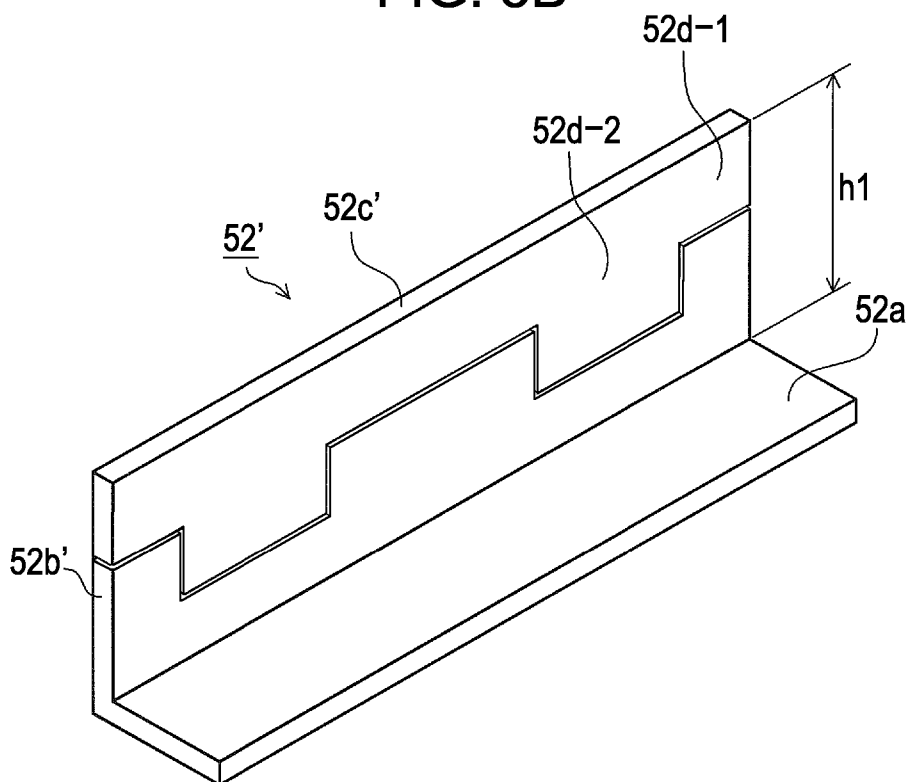


FIG. 5B



RECORDING MEDIA CASSETTE, RECORDING APPARATUS

BACKGROUND

[0001] 1. Technical Field

[0002] The present invention relates to recording media cassettes that are detachably mounted in the main body of an apparatus. Further, the present invention relates to recording apparatuses, such as facsimile machines or printers, having a recording media feeding device that feeds recording media from the recording media cassette.

[0003] 2. Related Art

[0004] Sheet cassettes that are detachably mounted in the main body of an apparatus are commonly used. In particular, JP-A-2006-273565 and JP-A-2007-91445 disclose a detachable sheet cassette (tray) having a dual-container configuration composed of upper and lower sheet containers. A sheet container that stores sheets therein in a recording apparatus is generally called various names, including “cassette”, “tray” and so forth. In the following description, an entire unit that is detachably mounted in the main body of the apparatus is referred to as a “cassette”, while each sheet container that is provided in the cassette is referred to as a “tray”.

[0005] In the sheet cassette having a dual-tray configuration as mentioned above, an upper tray is slidably and rotatably movable relative to a lower tray. The sheet cassette can be switched between a state in which the sheets can be fed from the upper tray and a state in which the sheets can be fed from the lower tray by slidably moving the upper tray. Further, a space for storing sheets in the lower tray is opened by turning the upper tray.

[0006] With such a dual-tray configuration of a sheet cassette, however, it is not possible to remove the upper tray from the lower tray. Accordingly, it is not always useful for a user who does not frequently use the upper tray, since the upper tray reduces the capacity for storing sheets in the lower tray. Further, an additional action to turn the upper tray is necessary when loading sheets into the lower tray.

SUMMARY

[0007] An advantage of some aspects of the invention is that the usability of a sheet cassette having a multiple-tray configuration composed of upper and lower trays is further improved.

[0008] According to an aspect of the invention, there is provided a recording media cassette of a first example, which includes a lower tray that stores recording media therein and an upper tray that stores recording media therein and is mounted on the lower tray so as to be detachable from the lower tray.

[0009] With this configuration, the recording media cassette having a multi-tray configuration is composed of a lower tray and an upper tray. Since the upper tray is detachable from the lower tray, the capacity for storing the recording media in the lower tray increases when the upper tray is removed, thereby further improving usability in using the lower tray. Moreover, a space for storing the recording media in the lower tray is fully opened when the upper tray is removed, thereby further improving operability in loading the recording media into the lower tray.

[0010] There is provided the recording media cassette of a second example according to the first example, in which it is preferable the upper tray is slidably displaceable by means of

a driving unit in a state in which the upper tray is mounted on the lower tray, the upper tray is in a state of being restrained by the lower tray when the upper tray is located in an active area of the upper tray by the driving unit within a slidably displaceable area of the upper tray, and the upper tray is released from the state of being restrained by the lower tray when the upper tray is located in an inactive area of the upper tray by the driving unit.

[0011] With this configuration, the upper tray is slidably displaceable by means of a driving unit, the upper tray is in a state of being restrained by the lower tray when the upper tray is located in an active area of the upper tray, and the upper tray is released from being in the restrained state when the upper tray is located in an inactive area, thereby ensuring the upper tray to be slidably displaced in the active area by means of the driving unit.

[0012] There is provided the recording media cassette of a third example according to any one of the first and second examples, in which it is preferable the upper tray is slidably displaceable to a position outside of an area for storing the recording media in the lower tray.

[0013] With this configuration, the upper tray is provided to be slidably displaceable to a position outside of an area for storing the recording media in the lower tray. Accordingly, the area for storing the recording media in the lower tray can be fully opened, thereby facilitating an operation in loading the recording media into the lower tray to a great extent.

[0014] There is provided the recording media cassette of a fourth example according to any one of the first to third examples, in which it is preferable the upper tray is configured to be independently detachably mounted in the main body of a recording apparatus that performs recording on the recording media in a state in which the upper tray is removed from the lower tray.

[0015] With this configuration, the upper tray is configured to be independently detachably mounted in the main body of a recording apparatus that performs recording on the recording media in a state in which the upper tray is removed from the lower tray. Accordingly, the recording media can be fed from the upper tray without using the lower tray, thereby further improving usability.

[0016] There is provided a recording media feeding device that feeds the recording media in a fifth example, in which it is preferable the recording media feeding device includes the recording media cassette according to any one of the first to fourth examples. According to another aspect of the invention, there is provided a recording apparatus including a recording unit that performs recording on the recording media, and the recording media feeding device according to the fifth example. With those configurations, the same effect can be achieved as that according to any one of the first to fourth examples.

BRIEF DESCRIPTION OF THE DRAWINGS

[0017] The invention will be described with reference to the accompanying drawings, wherein like numbers reference like elements.

[0018] FIG. 1 is a side sectional view which shows a sheet transportation path in a printer according to one embodiment of the invention.

[0019] FIG. 2 is a perspective view of a sheet cassette according to one embodiment of the invention.

[0020] FIG. 3 is a perspective view of a section of an essential part of the sheet cassette according to one embodiment of the invention.

[0021] FIGS. 4A and 4B are perspective views of an edge guide according to one embodiment of the invention.

[0022] FIGS. 5A and 5B are perspective views of an edge guide according to one embodiment of the invention.

DESCRIPTION OF EXEMPLARY EMBODIMENTS

[0023] An embodiment of the invention will be described below with reference to FIGS. 1 to 5. FIG. 1 is a side sectional view which shows a sheet transportation path in an ink jet printer (hereinafter referred to as a “printer”) 1 which is an example of a “recording apparatus” of the invention. FIG. 2 is a perspective view of a sheet cassette 100 which is an example of a “recording media cassette” of the invention. FIG. 3 is a perspective view of a section of an essential part of the sheet cassette 100. In addition, the rightward direction in FIG. 1 is a sheet feeding direction, while a direction perpendicular to the sheet feeding direction is a sheet width direction.

[0024] FIGS. 4A and 4B are perspective views of an edge guide 52, showing a state in which a guide surface of the guide is at a normal position (first state) and a state in which the guide surface of the guide is at an elevated position (second state), respectively. Further, FIGS. 5A and 5B are perspective views of an edge guide 52', showing a state in which a guiding height of a guide surface is at a normal position (first state) and a state in which the guiding height of the guide surface is at an elevated position (second state), respectively.

1. Overall Configuration of Printer

[0025] An overall configuration of the printer 1 will be described below with reference to FIG. 1. The printer 1 includes a feeding device 2 in the bottom portion of the apparatus. The feeding device 2 is configured to feed sheets (cut sheets in general) as an example of the “recording media” one by one toward an output stacker (not shown in the figure) disposed on the rear side of the apparatus (left side in FIG. 1) after a recording unit 4 has performed recording (ink jet recording).

[0026] Components disposed on the sheet transportation path will now be described in further detail. The feeding device 2 includes a sheet cassette 100, a pick up roller 16, guide roller 20 and a separation unit 21.

[0027] The sheet cassette 100, in which a plurality of sheets P can be set in a stacked state, is removably mounted in the main body of the apparatus from the front side with respect to the feeding device 2. The sheet cassette 100 includes two sheet containers, that is, a lower tray 50 which is disposed on the lower side thereof and constitutes a base of the sheet cassette 100, and an upper tray 60 which is disposed above the lower tray 50 and is slidably movable between a feedable position and a stand-by area.

[0028] In FIG. 1, the sheets stored in the lower tray 50 and the upper tray 60 are denoted by P1 and P2, respectively (hereinafter collectively referred to as “sheet P” as long as the sheets do not have to be individually identified).

[0029] The pick-up roller 16 which is rotated by a motor (not shown in the figure) is provided on a pivot member 17 that pivotally moves about a pivot shaft 18. When the upper tray 60 has been slid to the rear-most position (in a retracting direction of the sheet cassette 100, which is the leftward

direction in FIG. 1), that is, when the upper tray 60 is in a stand-by area, the pick-up roller 16 comes into contact with the uppermost sheet P1 stored in the lower tray 50 and rotates so as to feed the uppermost sheet P1 from the lower tray 50.

[0030] Moreover, when the upper tray 60 has been slid to the front-most position, which is the abutment position (in a mounting direction of the sheet cassette 100, which is the rightward direction in FIG. 1), that is, when the upper tray 60 is in a feedable position, the pick-up roller 16 comes into contact with the uppermost sheet P2 stored in the upper tray 60 and rotates so as to feed the uppermost sheet P2 from the upper tray 60.

[0031] When the upper tray 60 is positioned in the feedable position (as shown in FIG. 1), the separating slope 54 of the lower tray 50 extends toward the leading end of the sheets stored in the upper tray 60 beyond the front inner wall of the upper tray 60 such that the separating slope 54 serves as a separation unit when the sheets are fed from the upper tray 60. That is, the separating slope 54 of the lower tray 50 is used as a common separation unit for the lower tray 50 and the upper tray 60.

[0032] A freely rotatable guide roller 20 is disposed at a position downstream of the separating slope 54. Further, a separation unit 21 composed of a separation roller 22 and a driving roller 23 is disposed at a position downstream of the guide roller 20. The separation roller 22 has an outer periphery made of an elastic material and is capable of pressingly contacting the driving roller 23 while being in a state in which a predetermined rotation resistance is applied by a torque limiter mechanism. Accordingly, the subsequent sheets P are not permitted to be fed with the uppermost sheet P passing between the separation roller 22 and the driving roller 23, thereby preventing double feeding of the sheets P. The driving roller 23 is rotated by a motor, which is not shown in the figure, in the direction by which the sheets P are fed downstream.

[0033] A first intermediate feeder 25 is disposed at a position downstream of the separation unit 21. The first intermediate feeder 25 is composed of a driving roller 26 that is rotated by a motor, which is not shown in the figure, and an assisting roller 27 that is driven by the driving roller 26 so as to nip the sheet P therebetween such that the sheet P is fed further downstream. In addition, reference numeral 29 denotes a driven roller that reduces a passing load which is generated when the sheet P (particularly, the trailing edge of the sheet P) passing along a curved turn-around path.

[0034] Further, a second intermediate feeder 31 is disposed at a position downstream of the driven roller 29. The second intermediate feeder 31 is composed of a driving roller 32 that is rotated by a motor, which is not shown in the figure, and an assisting roller 33 that is driven by the driving roller 32 so as to nip the sheet P therebetween such that the sheet P is further fed downstream.

[0035] A recording unit 4 is disposed at a position downstream of the second intermediate feeder 31. The recording unit 4 includes a transportation unit 5, a recording head 42, a lower sheet guide 39 and an output unit 6. The transportation unit 5 is composed of a transportation driving roller 35 that is rotated by a motor and a transportation driven roller 36 that is supported by the upper sheet guide 37 so as to be in pressing contact with and driven by the transportation driving roller 35. When the sheet P enters the transportation unit 5, the transportation driving roller 35 rotates so that the sheet P is

fed downstream in an accurate manner while being nipped between the transportation driving roller 35 and the transportation driven roller 36.

[0036] The recording head 42 is disposed at the bottom of the carriage 40. The carriage 40 is actuated by a motor, which is not shown in the figure, so as to reciprocate in a main scanning direction while being guided by a carriage guide shaft 41 that extends in the main scanning direction (the direction extending across the drawing of FIG. 1 between the front side and the back side of the drawing). In addition, the carriage 40 is of a so-called off carriage type in which ink cartridges are not loaded. The ink cartridges (not shown) are separately provided from the carriage 40, so that ink is supplied from the ink cartridges to the recording head 42 via ink supply tubes (not shown).

[0037] A lower sheet guide 39 is disposed at a position opposite the recording head 42 such that a distance between the sheet P and the recording head 42 are defined by the lower sheet guide 39. Further, an output unit 6 is provided at a position downstream of the lower sheet guide 39 so as to output the sheet P on which recording has been performed.

[0038] The output unit 6 is composed of an output driving roller 44 that is rotated by a motor, which is not shown in the figure, and an output driven roller 45 that is in contact with and driven by the output driving roller 44 and is configured to output the sheet P on which recording has been performed by the recording unit 4 toward a stacker provided on the front side of the apparatus, which is not shown in the figure.

2. Details of Sheet Cassette

[0039] While the printer 1 is briefly described above, the sheet cassette 100 will be further described below in detail with reference to FIGS. 2 and 3. The lower tray 50 is provided on the bottom 50a with the edge guide 51 (FIG. 1), which is slidably movable in the sheet feeding direction (that is, sheet length direction), such that the position of the trailing edge of the sheet P1 is aligned with the edge guide 51.

[0040] Moreover, the lower tray 50 is further provided with the edge guide 52, which is slidably movable in a direction perpendicular to the sheet feeding direction (that is, sheet width direction), such that the position of one side edge of the sheet P1 is aligned with the edge guide 52. The other side edge is aligned with a side wall 50b (FIG. 2) of the lower tray 50. In other words, the side wall 50b of the lower tray 50 serves as a fixed edge guide.

[0041] A guide surface 51a of the edge guide 51 that defines the position of the trailing edge of the sheet P1 is formed as a slope that is substantially parallel with the separating slope 54 such that the leading end of a stack of sheets is aligned with the separating slope 54 when the edge guide 51 abuts the trailing edge of the sheet P1. The edge guide 52 that defines the position of the side edge of the sheet P1 will be described later in detail.

[0042] A high friction member 53 is placed on the bottom 50a of the lower tray 50 at a position corresponding to the contact point between the pick-up roller 16 and the sheet P1. The high friction member 53 holds the stack of sheet during feeding of a sheet so that the whole stack of sheets is not fed downstream by the pick-up roller 16.

[0043] Similarly to the lower tray 50, the upper tray 60 is provided with an edge guide 61 that is slidably movable in the sheet length direction and an edge guide 62 that is slidably movable in a sheet width direction on the bottom 60a. Further,

a high friction member 64 is placed at a position corresponding to the contact point between the pick-up roller 16 and the sheet P2.

[0044] A movable mechanism of the upper tray 60 will now be described. The upper tray 60 includes a slide member 65 and a tray base 66 such that the slide member 65 is slidably movable in the sheet feeding direction and the opposite direction with respect to the side walls 50b and 50c of the lower tray 50.

[0045] A tray base 66 is provided to form a space for storing the sheets. The tray base 66 is rotatable about rotation shafts 66a on both sides thereof in a direction indicated by the arrow r with respect to the sliding member 65. In addition, a rotation limit of the upper tray 60 (tray base 66) according to this embodiment is greater than 90 degrees and smaller than 180 degrees. That is, when the upper tray 60 has been turned to the maximum extent, a space for storing the sheets in the lower tray 50 is opened so that the sheets can be stored in the lower tray 50.

[0046] As shown in FIG. 3, a rack 65a is formed on the lower side of one side face of the sliding member 65 so that the rack 65a meshes with a pinion gear 55 that is provided on the lower tray 50. That is, the sliding member 65 (the upper tray 60) is configured to be slidably displaced as the pinion gear 55 rotates.

[0047] The pinion gear 55 is capable of meshing with a driving gear (not shown) provided on the main body of the printer 1, when the sheet cassette 100 is mounted in the main body of the printer 1. The driving gear is rotated by a motor, which is not shown in the figure, thereby driving the sliding member 65 (the upper tray 60).

[0048] A locking member 65b is formed on the sliding member 65 at a position slightly ahead of the rack 65a. The locking member 65b is configured to be put under a restraining rail 50d that is formed on the lower tray 50. When the locking member 65b is put under the restraining rail 50d (the locking member 65b is on the A side with respect to the position L indicated in FIG. 3, which is hereinafter referred to as "active area" of the upper tray 60), the rack 65a meshes with the pinion gear 55 while the locking member 65b is put under the restraining rail 50d, thereby restraining the sliding member 65 (the upper tray 60) so as not to be removed from the lower tray 50. Accordingly, the upper tray 60 is placed at a position which permits feeding of the sheets from the upper tray 60.

[0049] On the other hand, when the locking member 65b is ahead of the restraining rail 50d without being engaged with the restraining rail 50d (the locking member 65b is on the B side with respect to the position L indicated in FIG. 3, which is hereinafter referred to as "inactive area" of the upper tray 60), the rack 65a is not meshed with the pinion gear 55 while the locking member 65b disengages the restraining rail 50d, thereby allowing the sliding member 65 (the upper tray 60) to be removed from the lower tray 50 (as shown by the virtual line and reference numeral 60' in FIG. 2). The inactive area of the upper tray 60 according to this embodiment is a position at which the upper tray 60 has been slid to the front-most position.

[0050] As mentioned above, the sheet cassette 100 having a multi-tray configuration composed of the lower tray 50 and the upper tray 60 is configured such that the upper tray 60 is removable from the lower tray 50. Consequently, the capacity for the sheets in the lower tray 50 increases when the upper tray 60 is removed, thereby further improving usability of the

lower tray 50. Moreover, the space for storing the sheets in the lower tray 50 is fully opened when the upper tray 60 is removed, thereby further improving operability in loading the sheets into the lower tray 50.

[0051] In this embodiment, the upper tray 60 is slidably displaceable by means of driving units such as the rack 65a, the pinion gear 55 and a motor that drives the pinion gear 55 (not shown). In addition to that, the upper tray 60 is in a state of being restrained by the lower tray 50 in the active area of the upper tray 60, and the upper tray 60 is released from being in the restrained state in the inactive area. As a result, the upper tray 60 can be slidably displaced in a reliable manner without causing disengagement of the rack 65a from the pinion gear 55 in the active area.

[0052] Moreover, although the upper tray 60, when in the stand-by position, is located above the space for storing the sheets in the lower tray 50 in this embodiment, the upper tray 60 may be configured in other embodiments to be slidably displaceable to a position outside of the space for storing the sheets in the lower tray 50 so that the space for storing the sheets in the lower tray 50 can be fully opened without turning or removing the upper tray 60.

[0053] Furthermore, the upper tray 60 may be configured in other embodiments to be detachably mounted in the main body of the printer 1 separately from the lower tray 50, so that the sheets can be fed from the upper tray 60 without using the lower tray 50, thereby further improving usability.

3. Details of Edge Guide

[0054] The edge guide 52 that is provided on the lower tray 50 will be further described in detail with reference to FIGS. 4 and 5. As described above, the space for storing the sheets in the lower tray 50 increases when the upper tray 60 is removed from the lower tray 50, which enables the increased number of the sheets to be stored in the lower tray 50. However, if a guiding height of the edge guide 52 that is provided on the lower tray 50 remains the same, the sheets stored in the lower tray 50 cannot be guided in an appropriate manner after the upper tray 60 is removed.

[0055] Accordingly, the edge guide 52 that is provided on the lower tray 50 according to this embodiment is configured such that the guiding height of the guide surface is adjustable. More specifically, as shown in FIGS. 4A and 4B, the edge guide 52 includes a base 52a that slides along the bottom of the lower tray 50, an upright portion 52b formed integrally with the base 52a so as to be mounted upright on the base 52a, a plate member 52c that is rotatable with respect to the upright portion 52b about a rotation shaft 52e and a biasing unit, which is not shown in the figure, that biases the plate member 52c in a direction indicated by the arrow C1.

[0056] Reference numeral 52d denotes the guide surface along which the sheet edge is guided. The guiding height of the guide surface 52d is configured to increase as the plate member 52c rotates in the direction indicated by the arrow C1, from a first state shown in FIG. 4A to a second state shown in FIG. 4B.

[0057] More specifically, when the upper tray 60 is usually mounted on the lower tray 50, the plate member 52c engages the bottom of the upper tray 60, that is, the plate member 52c is pressed down, thereby retaining the first state as shown in FIG. 4A.

[0058] Then, when the upper tray 60 is removed from the lower tray 50 as shown by reference numeral 60' in FIG. 2, the plate member 52c disengages from the upper tray 60. As a

result, the plate member 52c is rotated by a biasing force from the biasing unit and switched to the second state as shown in FIG. 4B, thereby changing (increasing) the guiding height of the guide surface 52d from h0 (FIG. 4A) to h1 (FIG. 4B) ($h1 > h0$).

[0059] That is, the guiding height of the guide surface 52d is adjustable and the guiding height of the edge guide 52 increases as the capacity for the sheets in the lower tray 50 increases, thereby enabling the increased number of stacked sheets to be accommodated. As a result, the sheet can be fed in an appropriate manner without causing a feeding problem such as skew feeding.

[0060] Moreover, in this embodiment, the sheet guide surface 52d is formed by the plate member 52c that is rotatable about the rotation shaft 52e such that the guiding height of the guide surface 52d can be adjusted by rotation of the plate member 52c. Accordingly, a switching mechanism for the guiding height of the guide surface 52d can be achieved in a simple configuration at low cost.

[0061] In addition to that, the rotation shaft 52e is formed to be perpendicular to the guide surface 52d in this embodiment such that, when the plate member 52c rotates about the rotation shaft 52e, the edge of the sheets is aligned with a single surface of the guide surface 52d in both the first state and the second state. Accordingly, a smooth, flat or seamless guide surface is provided during setting of the sheets without causing a problem, such as that the sheet gets stuck, in both the first state and the second state.

[0062] Further, since the guiding height of the guide surface 52d decreases when the edge guide 52 engages the upper tray 60 and the guiding height of the guide surface 52d increases when the edge guide 52 disengages from the upper tray 60 in this embodiment, the guiding height of the guide surface 52d increases without needing a specific operation. Accordingly, the sheet cassette with high usability can be achieved. In addition, the upper tray 60 according to this embodiment remains in engagement with the edge guide 52 (the plate member 52c) when the upper tray 60 is mounted on the lower tray 50, regardless of the position where the upper tray 60 is located in the slidable area.

[0063] Although the above-mentioned embodiment has been described that the guiding height of the guide surface 52d is configured to be changed between two states, that is, a lower state (FIG. 4A) and a higher state (FIG. 4B), the guiding height may be changed in a stepwise manner for example by defining several height positions, or alternatively, the guiding height may be continuously changed. In such cases, it is desirable to provide a holding unit so as to retain the predetermined guiding height.

[0064] Another embodiment will be described with reference to FIGS. 5A and 5B. The same configurations as those of FIGS. 4A and 4B are referenced by the same reference numerals, while the configurations corresponding to but different from those of FIGS. 4A and 4B are referenced by the same reference numerals with a prime mark.

[0065] In FIGS. 5A and 5B, the edge guide 52' includes a base 52a, an upright portion 52b' formed integrally with the base 52a so as to be mounted upright on the base 52a, a plate member 52c' that is rotatable with respect to the upright portion 52b' about rotation shaft bearings 52f and a biasing unit, which is not shown in the figure, that biases the plate member 52c' in a direction indicated by the arrow C2. The rotation shaft bearing 52f is a bearing that supports a shaft (not shown) formed on the upright portion 52b'.

[0066] Reference numerals **52d-1** and **52d-2** denote guide surfaces along which the sheet edge is guided. In a first state shown in FIG. 5A, the guide surface **52d-1** formed by the upright portion **52b'** constitutes a guide surface of the edge guide **52'**. The guiding height in this configuration is h_0 .

[0067] Then, as the plate member **52c'** rotates in the direction indicated by the arrow **C2**, thereby deploying the guide surface **52d-2** that is formed by the plate member **52c'** on the guide surface **52d-1**, the overall guiding height changes (increases) to h_1 ($h_1 > h_0$) from a first state shown in FIG. 5A to a second state shown in FIG. 5B.

[0068] Accordingly, also in this embodiment, the guiding height of the edge guide **52'** increases as the capacity for the sheets in the lower tray **50** increases, thereby enabling the increased number of stacked sheets to be accommodated. As a result, the sheet can be fed in an appropriate manner without causing a feeding problem such as skew feeding.

[0069] Similar to the edge guide **52**, which has been described with reference to FIGS. 4A and 4B, the edge guide **52'** of this embodiment may be configured to retain the first state, which is achieved by the plate member **52c'** engaging the bottom of the upper tray **60**, that is, being pressed down by the upper tray **60**. Accordingly, the first state is not limited to a state in which the plate member **52c'** has been fully rotated downward and is in close contact with the upright portion **52b'** as shown in FIG. 5A, but also may be a state in which the plate member **52c'** has been rotated to a certain extent in a direction indicated by the arrow **C2** from the state shown in FIG. 5A.

[0070] In addition, the plate member **52c'** in the second state shown in FIG. 5B may be inclined to a certain extent toward the first state in order to facilitate downward rotation of the plate member **52c'** when the plate member **52c'** is pressed down by the upper tray **60** in the state shown in FIG. 5B.

[0071] Furthermore, although the first state and the second state have been described to be switched by means of the edge guides **52** and **52'** engaging with/disengaging from the upper tray **60**, a holding unit, for example, may be separately provided so that the first state and the second state are retained by the holding unit and such retained state is released by an operation of a user.

[0072] Although the edge guides **52** and **52'** have been described as to guide the side edge of the sheets, it is needless to say that the above edge guide may apply to an edge guide for the trailing edge of the sheets (shown by reference numeral **51** in FIG. 1).

[0073] The entire disclosure of Japanese Patent Application No. 2010-287063, filed Dec. 24, 2010 is expressly incorporated by reference herein.

What is claimed is:

1. A recording media cassette comprising:
a lower tray that stores recording media therein; and
an upper tray that stores recording media therein and is mounted on the lower tray so as to be detachable from the lower tray.
2. The recording media cassette according to claim 1, wherein the upper tray is slidably displaceable with respect to the lower tray in a state in which the upper tray is mounted on the lower tray, and the upper tray is in a state of being restrained by the lower tray when the upper tray is located in a feedable position of the upper tray within a slidably displaceable area of the upper tray.
3. The recording media cassette according to claim 2, wherein the upper tray is slidably displaceable by means of a driving unit, the upper tray is in a state of being restrained by the lower tray, and the upper tray is released from the state of being restrained by the lower tray by the driving unit.
4. The recording media cassette according to claim 2, wherein the upper tray is slidably displaceable to a position outside of an area for storing the recording media in the lower tray.
5. The recording media cassette according to claim 1, wherein the upper tray is configured to be independently detachably mounted in the main body of a recording apparatus that performs recording on the recording media in a state in which the upper tray is removed from the lower tray.
6. A recording apparatus comprising:
the recording media cassette according to claim 1;
a recording media feeding device that feeds the recording media from the recording media cassette; and
a recording unit that performs recording on the recording media.

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