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(19) **United States**(12) **Patent Application Publication**
KOBAYASHI et al.(10) **Pub. No.: US 2012/0199687 A1**(43) **Pub. Date: Aug. 9, 2012**(54) **ROLLED MEDIUM HOLDER DEVICE AND
RECORDING APPARATUS****Publication Classification**(51) **Int. Cl.**
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(52) **U.S. Cl.** **242/566**(57) **ABSTRACT**

A rolled medium holder device includes: a guide member; a holder unit, including a shaft portion that holds a roll-shaped rolled medium, that is slidable relative to the guide member; and a stopper member, provided in the holder unit, that makes surface contact with the outer circumferential surface of the guide member. Here, the pressing force exerted on the outer circumferential surface of the guide member by the stopper member between two different points of the stopper member in the circumferential direction of the guide member can be adjusted; the holder unit is immobilized by increasing the pressing force; and the holder unit can be slid by reducing the pressing force.

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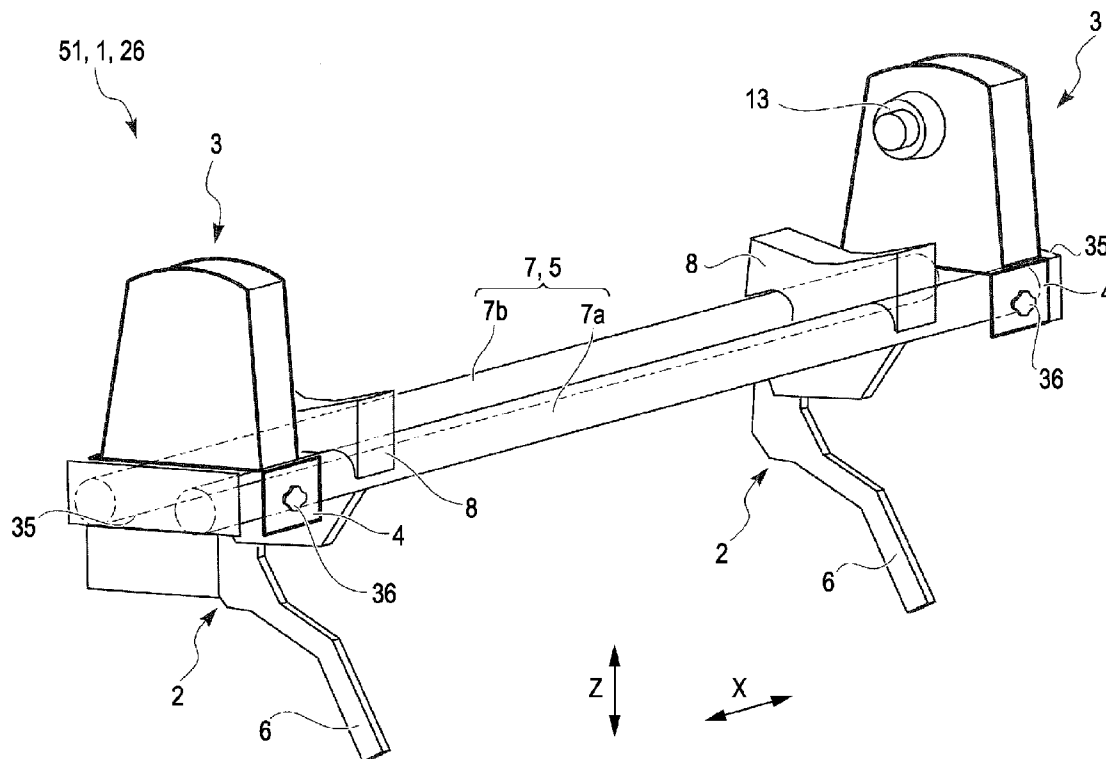


FIG. 1

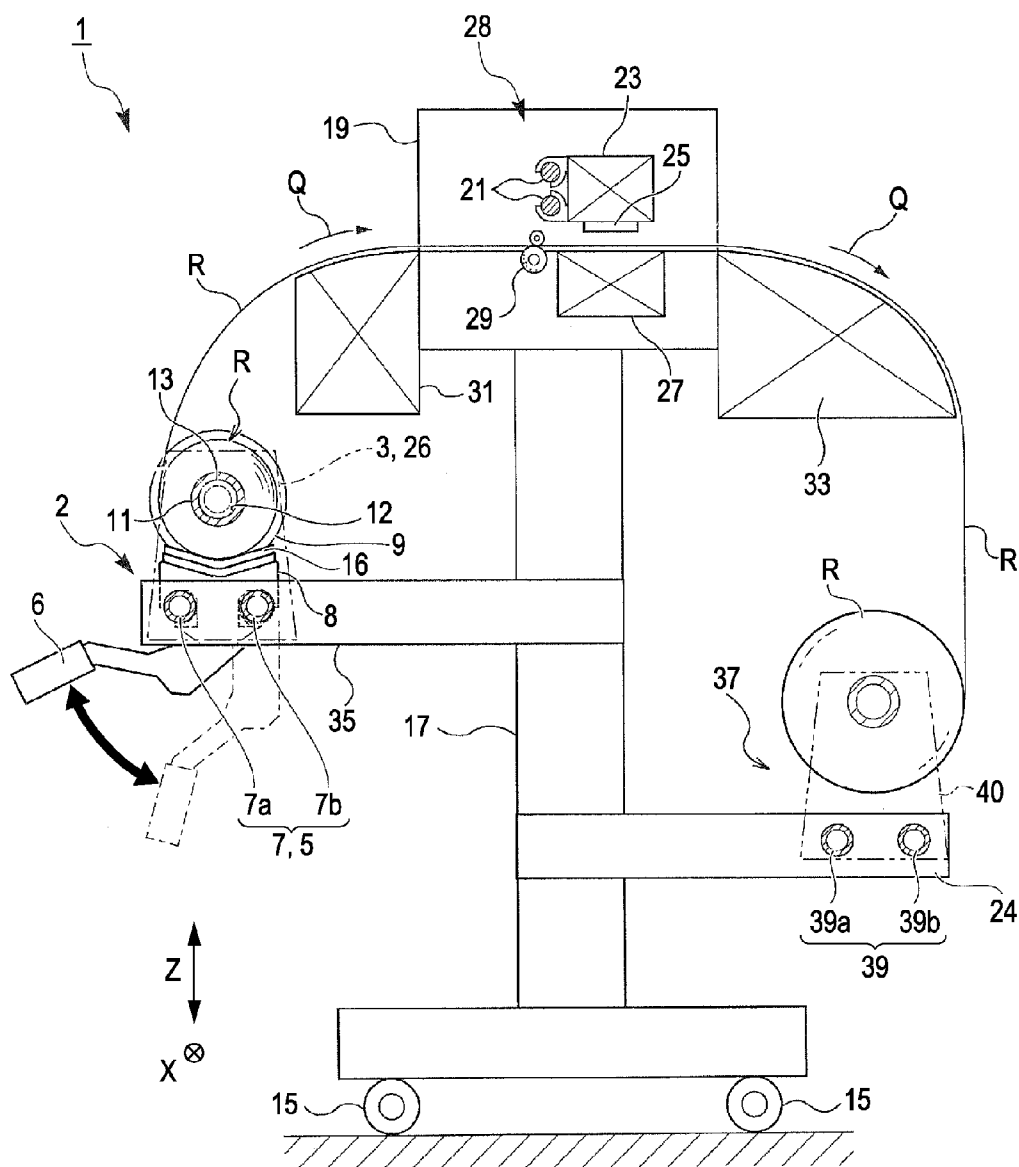


FIG. 2

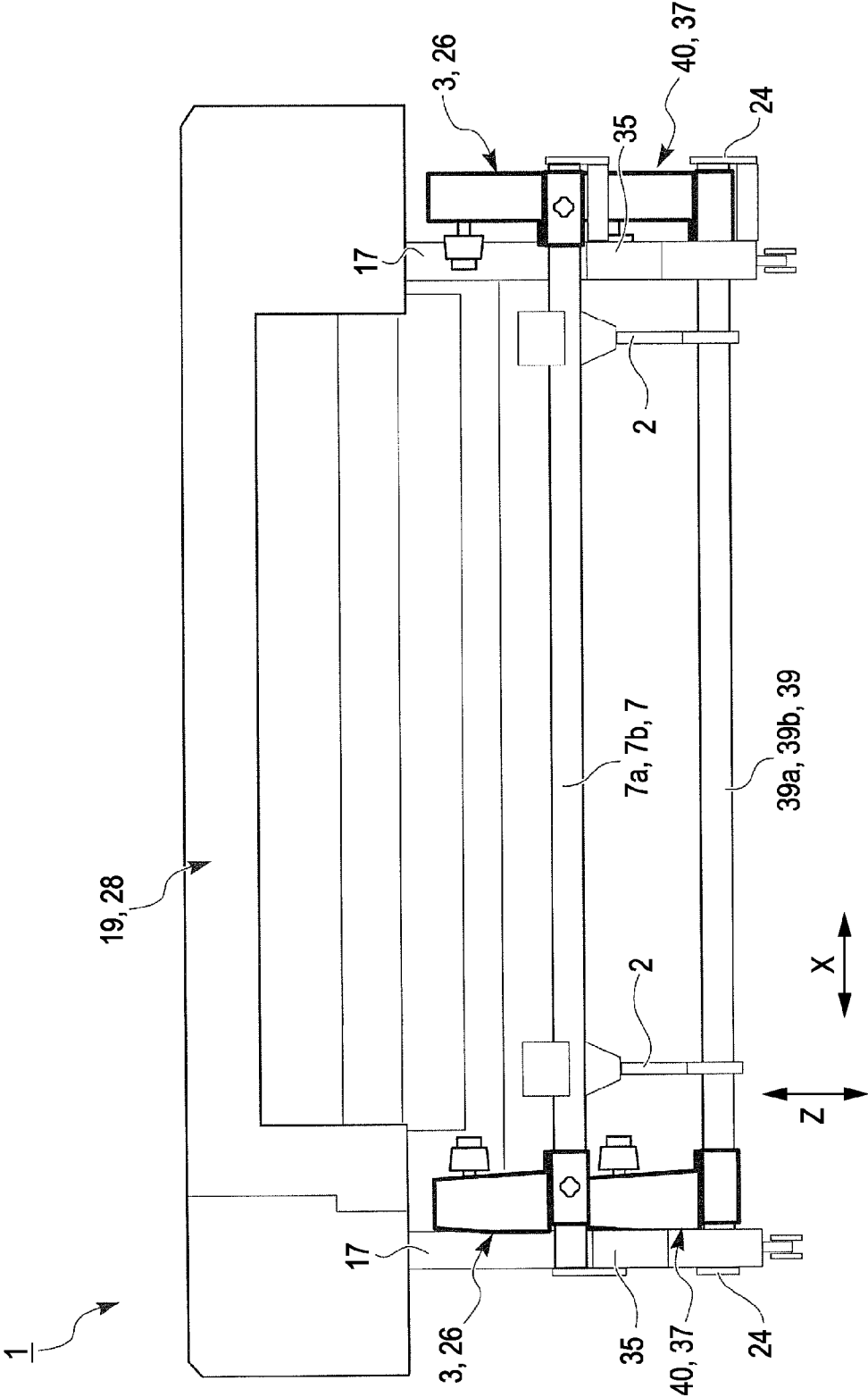


FIG. 3

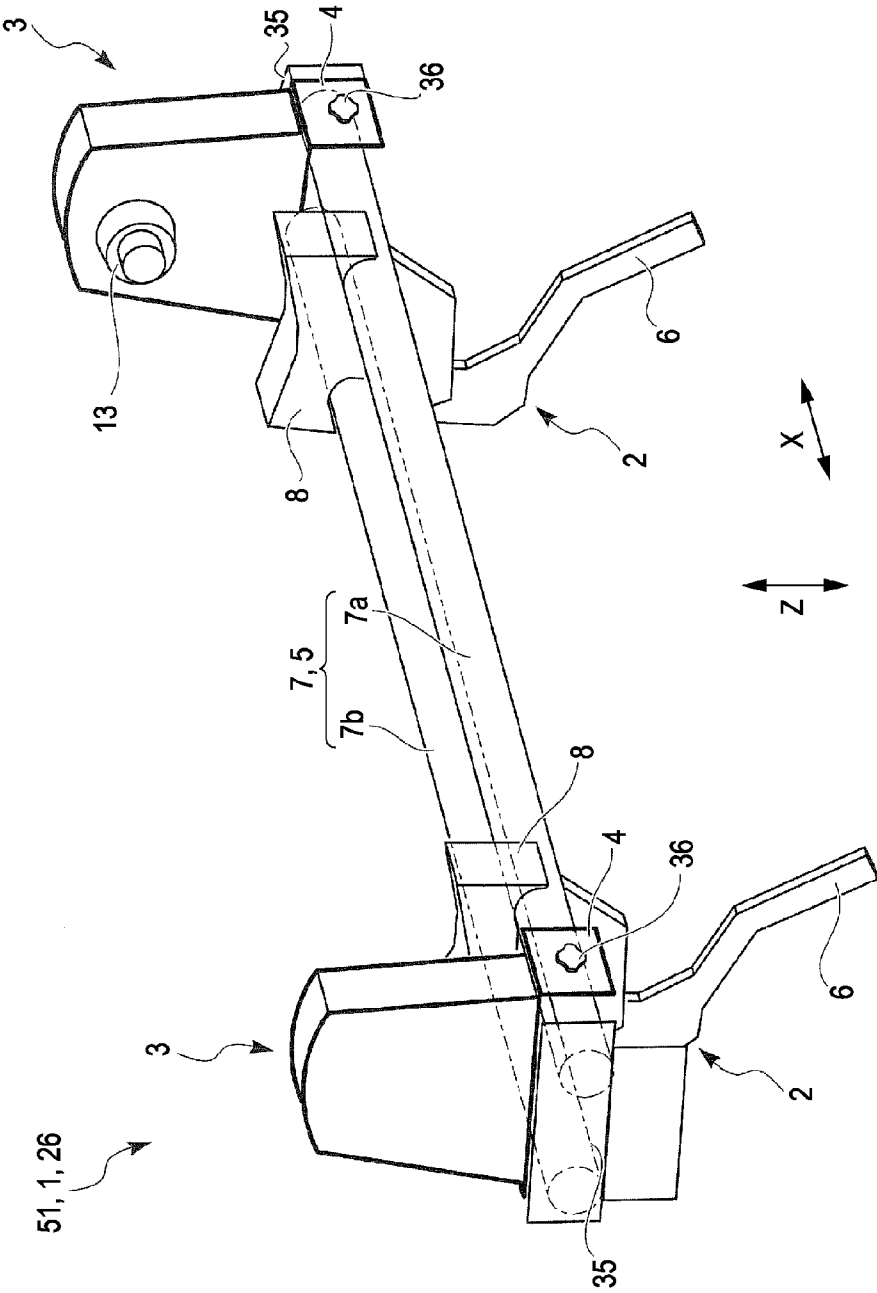


FIG. 4

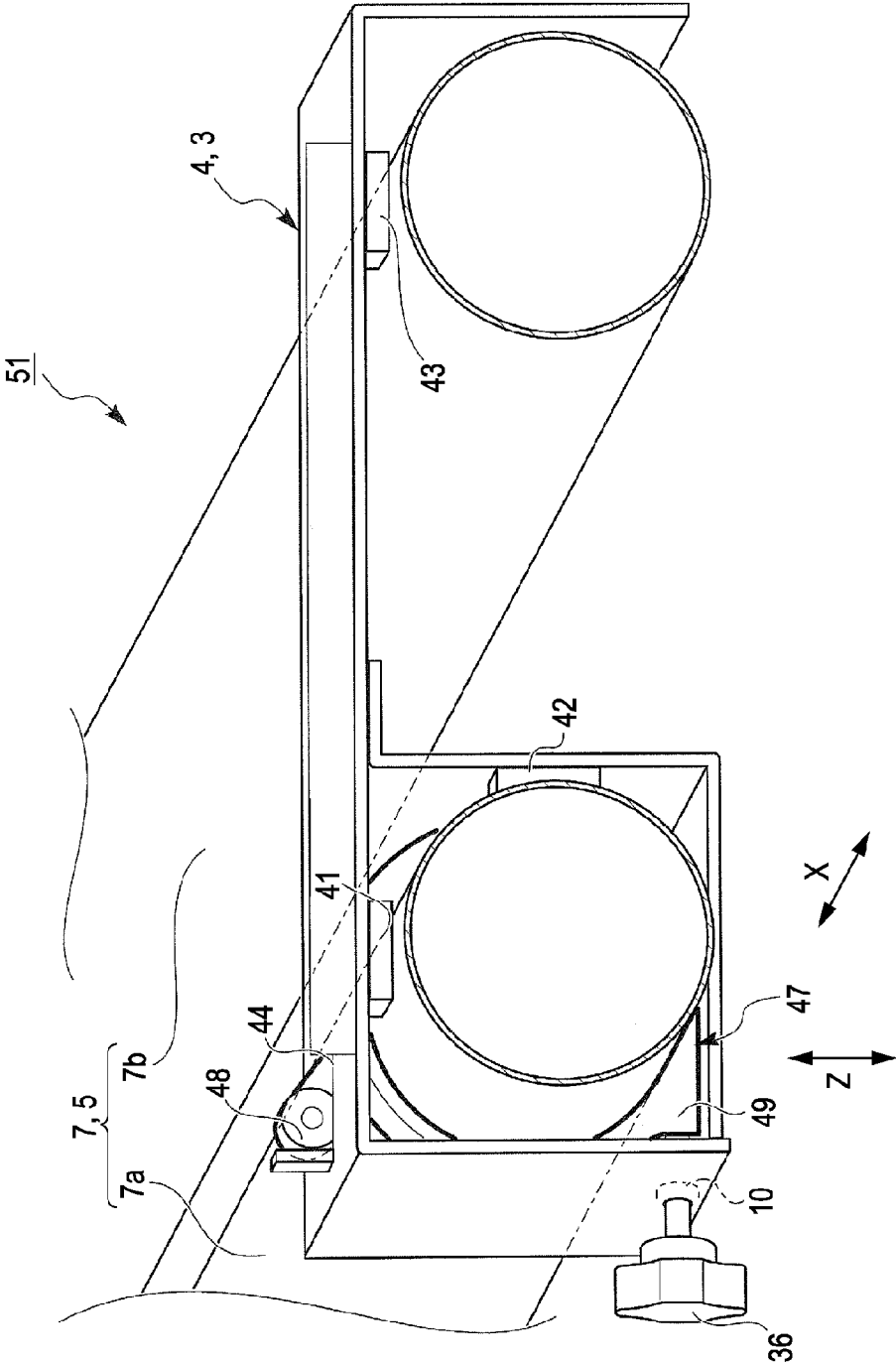


FIG. 5

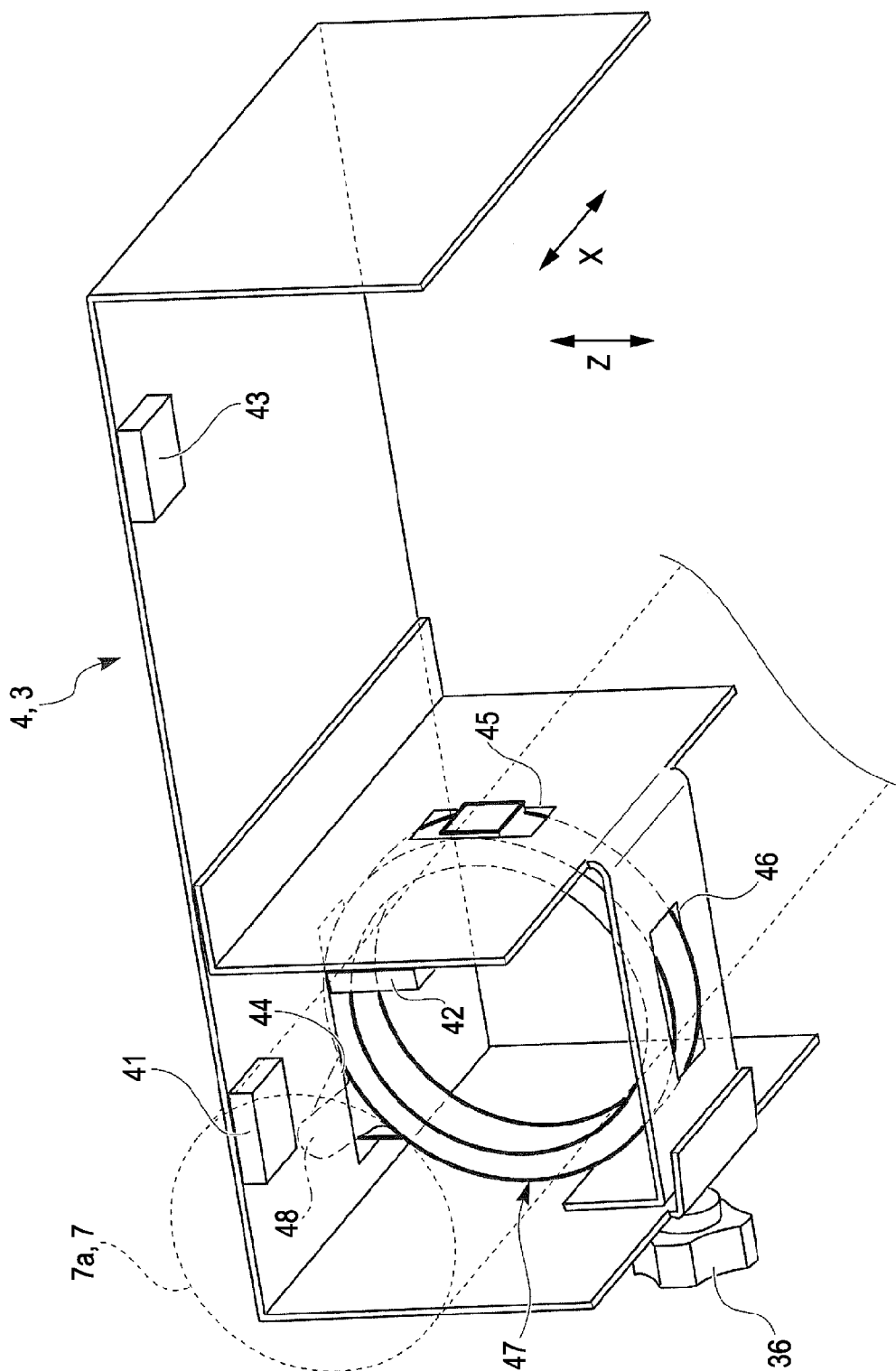


FIG. 6

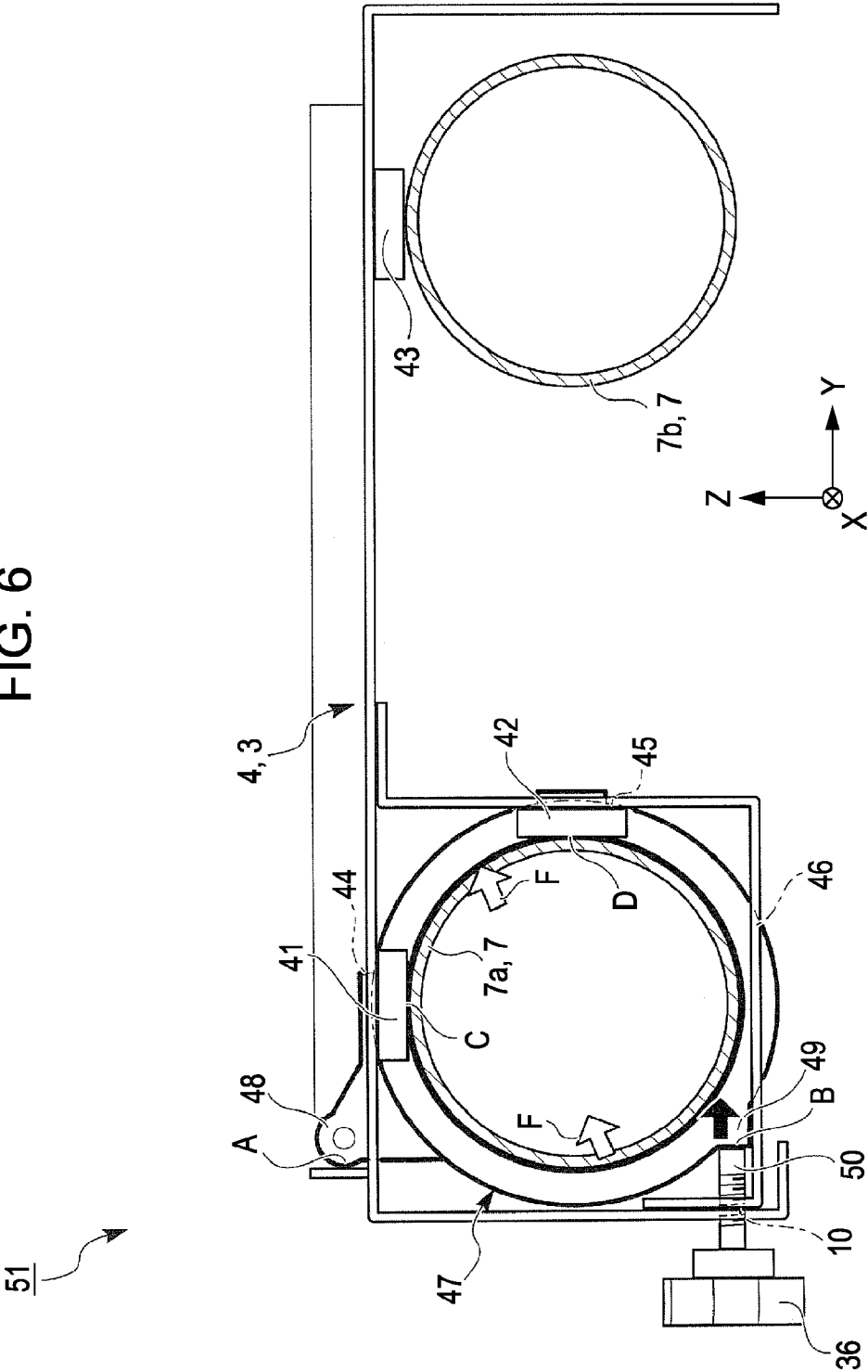
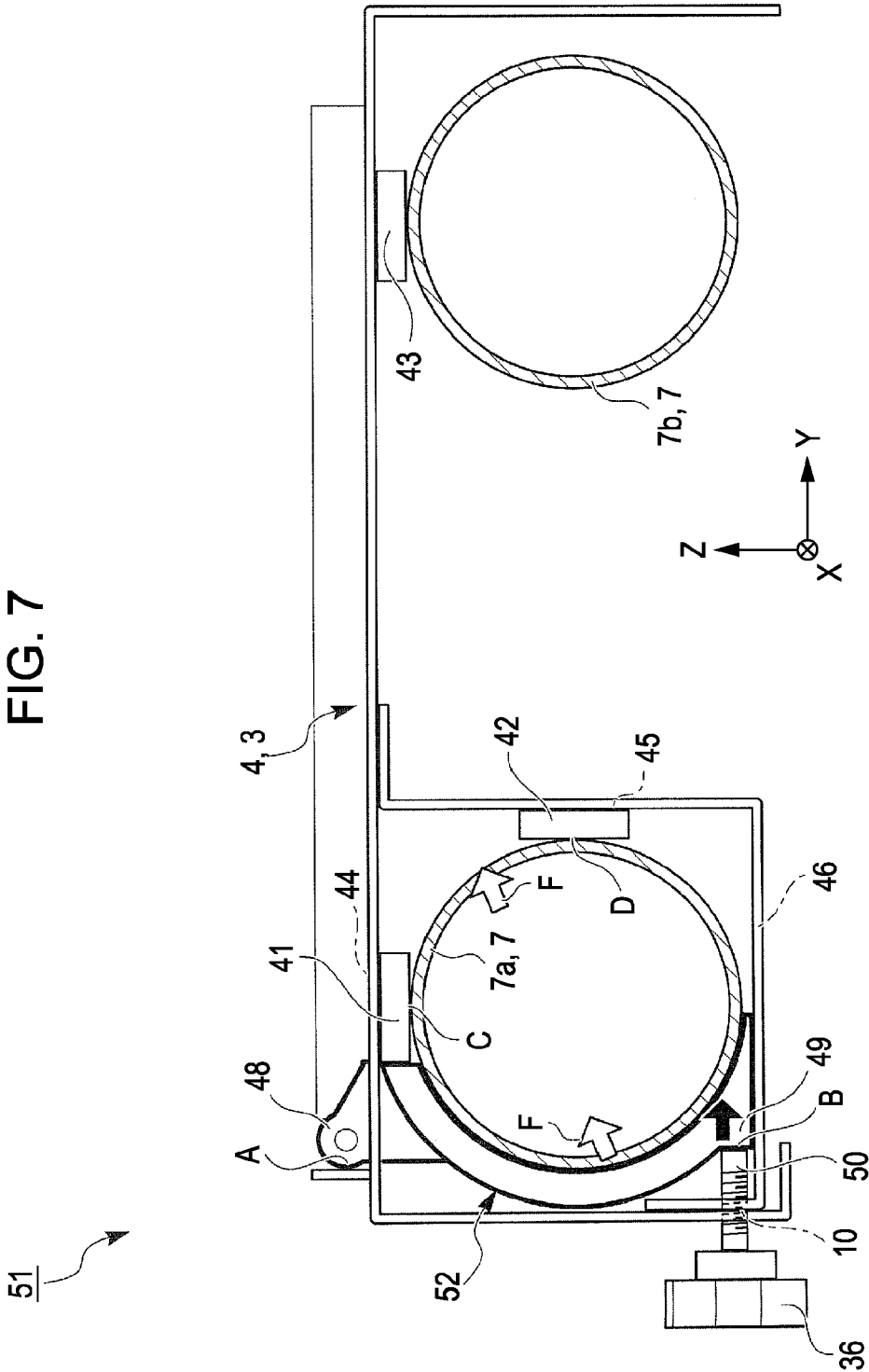


FIG. 7



ROLLED MEDIUM HOLDER DEVICE AND RECORDING APPARATUS

[0001] This application claims priority to Japanese Patent Application No. 2011-021853, filed Feb. 3, 2011 which is expressly incorporated herein by reference.

BACKGROUND

[0002] 1. Technical Field

[0003] The present invention relates to rolled medium holder devices that hold roll-shaped media and recording apparatuses provided with such rolled medium holder devices.

[0004] The “recording apparatus” referred to in this application is assumed to include various types, such as ink jet printers, wire dot printers, laser printers, line printers, copiers, facsimile machines, and so on.

[0005] 2. Related Art

[0006] Thus far, some recording apparatuses have included holder devices that hold roll-shaped rolled paper, such as that disclosed in JP-A-2009-234668. This holder device includes a pair of holders provided on both sides of the rolled paper. At least one of the holders in the pair is provided so as to be capable of sliding along guide portions extending in the width direction of the rolled paper. Accordingly, by sliding at least one of the holders in accordance with the size of the rolled paper, the pair of holders can fit into and hold the rolled paper on both sides of the rolled paper.

[0007] With this configuration, it is necessary to immobilize the slidable holders when the recording apparatus is in use in order to stabilize the position of the rolled paper in the width direction. Thus far, the guide portions have been formed of an extremely firm material, and thus the tips of screws provided in the holders have been pressed against the guide portions so as to make point contact. Generally, the configuration has been such that the holders are immobilized relative to the guide portions by setting the friction at the point of contact to be greater than or equal to a predetermined amount.

[0008] However, configuring the guide portions to be hollow, thin, or changing the material of the guide portions can be considered as ways to reduce the weight and cost of the recording apparatus and the holder device. If such is the case, there is a risk that the area of the guide portions where the tips of the screws make contact will be scratched, deformed, or the like.

SUMMARY

[0009] It is an advantage of some aspects of the invention to provide a rolled medium holder device that takes into consideration breakages in a guide portion when a holder portion that is slidable relative to the guide portion is immobilized relative to the guide portion, and to provide a recording apparatus that includes the rolled medium holder device.

[0010] A rolled medium holder device according to a first aspect of the invention includes: a guide member that extends in the width direction of a rolled medium; a holder unit, including a shaft portion that holds the roll-shaped rolled medium, that is slidable relative to the guide member; and a stopper member, provided in the holder unit, that makes surface contact with the outer circumferential surface of the guide member. Here, the pressing force exerted on the outer

circumferential surface of the guide member by the stopper member between two different points of the stopper member in the circumferential direction of the guide member can be adjusted; the position of the holder unit can be immobilized relative to the guide member by increasing the pressing force; and the holder unit can be slid relative to the guide member by reducing the pressing force from the immobilized state.

[0011] According to this aspect, the stopper member makes surface contact with the outer circumferential surface of the guide member, and thus there is no risk of the stopper member scratching the outer circumferential surface of the guide member. In addition, the pressing force is not concentrated at a single point, and there is therefore no risk of the guide member being damaged. The holder unit can be immobilized relative to the guide member without damage particularly in the case where the guide member is hollow and thin in order to reduce the weight thereof.

[0012] Furthermore, because there is no risk of the outer circumferential surface of the guide member being scratched, the holder unit can be slid relative to the guide member smoothly when put into a slidable state even in the case where repeated switches between the immobilized state and the slidable state have been carried out.

[0013] It is preferable that a second aspect of the invention be the first aspect, where the guide member is hollow.

[0014] In addition to having the same effects as the first aspect, according to this aspect, there is a risk of the guide member being damaged in the case where the guide member is hollow. In such a case, a configuration in which the stopper member makes surface contact is particularly useful.

[0015] It is preferable that a third aspect of the invention be the first or second aspect, where the magnitude of the pressing force is changed by changing the position of at least one of the two points in the stopper member.

[0016] According to this aspect, in addition to having the same effects as the first or second aspects, it is possible to switch between the immobilized state and the slidable state with ease, using a simple configuration. In addition, it is possible to easily adjust the position of the holder unit that is to be immobilized after sliding the holder unit relative to the guide member.

[0017] It is preferable that a fourth aspect of the invention be one of the first through third aspects, where the stopper member is formed of a flexible material.

[0018] According to this aspect, in addition to having the same effects as one of the first through third aspects, it is possible to make the pressing force that is exerted on the area of surface contact essentially uniform. As a result, it is possible to prevent the guide member from being damaged with more certainty.

[0019] It is preferable that a fifth aspect of the invention be one of the first through fourth aspects, where the guide member and the holder unit make contact at at least two points in the circumferential direction, and the pressing force is exerted toward the area between the two points.

[0020] According to this aspect, in addition to having the same effects as one of the first through fourth aspects, it is possible to precisely set the position and orientation of the holder unit relative to the guide member.

[0021] It is preferable that a sixth aspect of the invention be one of the first through fifth aspects, where the stopper member is formed in a ring shape.

[0022] According to this aspect, in addition to having the same effects as one of the first through fifth aspects, it is possible to easily configure the stopper member.

[0023] A recording apparatus according to a seventh aspect of the invention includes: a feed-out mechanism capable of feeding out a roll-shaped rolled medium downstream in a feed direction; a recording unit that records onto the feed-out rolled medium; and a take-up mechanism that takes up the rolled medium that has been recorded onto. Here, at least one of the feed-out mechanism and the take-up mechanism includes the rolled medium holder device according to one of the aforementioned first through sixth aspects.

[0024] According to this aspect, at least one of the feed-out mechanism and the take-up mechanism includes the rolled medium holder device according to one of the aforementioned first through sixth aspects. Accordingly, the recording apparatus is capable of achieving the same effects as those of one of the aforementioned first through sixth aspects.

BRIEF DESCRIPTION OF THE DRAWINGS

[0025] The invention will be described with reference to the accompanying drawings, wherein like numbers reference like elements.

[0026] FIG. 1 is a cross-sectional view, seen from the side, illustrating an outline of the overall configuration of a printer according to an embodiment.

[0027] FIG. 2 is a front view illustrating an outline of the overall configuration of the printer according to the embodiment.

[0028] FIG. 3 is a perspective view illustrating a rolled medium holder device in a medium feed-out mechanism according to the embodiment.

[0029] FIG. 4 is a perspective view illustrating a stopper member of the rolled medium holder device according to the embodiment.

[0030] FIG. 5 is a perspective view illustrating the stopper member of the rolled medium holder device according to the embodiment.

[0031] FIG. 6 is a cross-sectional view, seen from the side, illustrating the stopper member of the rolled medium holder device according to the embodiment.

[0032] FIG. 7 is a cross-sectional view, seen from the side, illustrating a stopper member according to another embodiment.

DESCRIPTION OF EXEMPLARY EMBODIMENTS

[0033] Hereinafter, embodiments of the invention will be described with reference to the drawings.

[0034] FIG. 1 is a cross-sectional view, seen from the side, illustrating an outline of the overall configuration of a large-format ink jet printer 1 (called simply a "printer" hereinafter), serving as a recording apparatus according to this embodiment.

[0035] As shown in FIG. 1, the printer 1 includes a medium feed-out mechanism 26, a recording unit 28, and a take-up mechanism 37. Of these, the medium feed-out mechanism 26 is configured so as to be capable of releasing a rolled medium R, which is wound up in roll form, and feeding that rolled medium R in a feed direction Q. Specifically, the medium feed-out mechanism 26 includes first holder units 3 and a roller pair 29.

[0036] Of these, the first holder units 3 are provided so as to be capable of holding both ends of the rolled medium R so that the rolled medium R can rotate. Each of the first holder units 3 includes a shaft portion 13 that is fitted into a core hole 12 of a roll core 11 of the rolled medium R, and a flange portion 9 that is capable of making contact with an end portion of the rolled medium R. The shaft portion 13 may be configured so as to rotate freely, or may be configured so as to be driven by the driving force of a motor (not shown). In the case where the shaft portion 13 is configured so as to rotate freely, the rolled medium R is released by being pulled by the roller pair 29, which is driven at the downstream side of the feed direction.

[0037] Note that a pair of the first holder units 3 is provided so that the first holder units are opposed to each other. Of these, at least one of the first holder units 3 is configured so that its attachment position can be adjusted by sliding in a width direction X relative to a guide member 7 in accordance with differences in the width dimension of the rolled medium R.

[0038] A temporary placement platform 5, serving as a temporary placement unit, and lifting mechanisms 2 are provided below the first holder units 3. The temporary placement platform 5 is a platform for temporarily placing the rolled medium R prior to mounting the rolled medium R on the first holder units 3. For example, the temporary placement platform 5 is configured of a first pipe member 7a and a second pipe member 7b that extend in the width direction X. Meanwhile, the lifting mechanisms 2 are configured so as to be capable of easily lifting the heavy rolled medium R that has been placed on the temporary placement platform 5 so that the end portions of the rolled medium R can be easily mounted on the first holder units 3.

[0039] Specifically, each lifting mechanism 2 includes: a base unit 8 capable of sliding in the width direction X relative to the first pipe member 7a and the second pipe member 7b that serve as the guide member 7; an operating lever 6; and a raising/lowering portion 16. By pivoting the operating lever 6 in one of the directions shown, the raising/lowering portion 16 is raised, and thus the rolled medium R can be lifted up. On the other hand, by pivoting the operating lever 6 in the opposite direction, the raising/lowering portion 16 is lowered, and thus the rolled medium R can be lowered.

[0040] Meanwhile, the recording unit 28 includes a main printer unit 19. The main printer unit 19 is provided with: carriage guide shafts 21 that extend in the width direction X; a carriage 23; a recording head 25; and a medium support portion 27. The carriage 23 is provided so as to be capable of moving in the width direction X while being guided by the carriage guide shafts 21. Meanwhile, the recording head 25 is provided in a position in the carriage 23 that opposes the medium support portion 27, and is configured so as to be capable of recording by ejecting ink onto the rolled medium R. Furthermore, the medium support portion 27 is provided so as to support the rolled medium R and so as to be capable of maintaining the distance between the rolled medium R and the recording head 25 at a predetermined distance.

[0041] Although the roller pair 29 is provided within the main printer unit 19, the roller pair 29 may be provided outside of the main printer unit 19. Either configuration may be employed as long as the rolled medium R can be fed in the feed direction Q.

[0042] In addition, a pre-heater 31 is provided upstream from the main printer unit 19 in the feed direction. The pre-

heater 31 is used to make it easier for the ink that has landed on the rolled medium R during the execution of recording to dry, by heating the rolled medium R in advance, prior to the recording being executed on the rolled medium R.

[0043] Furthermore, an after-heater 33 is provided downstream from the main printer unit 19 in the feed direction. The after-heater 33 is used to completely dry the ink that has landed on the rolled medium R, during the time after the recording has been executed and before the rolled medium R is taken up by the take-up mechanism 37.

[0044] Furthermore, the take-up mechanism 37 takes up the rolled medium R under the driving force of a motor (not shown), and is configured so as to be capable of holding the rolled medium R that has been taken up onto second holder units 40, which are attached to a third pipe member 39a and a fourth pipe member 39b, each of the members serving as a guide member 39.

[0045] Note that the printer 1 is provided with support frames 17 on left and right end portions so as to oppose each other, each of which has an inverted T-shape when viewed from the side, and includes casters 15 on its lower area for movement. The main printer unit 19 is provided on the upper portion of the support frames 17. Furthermore, the temporary placement platform 5 is attached to sub-frames 35, which in turn are attached to the support frames 17. Further still, both ends of the third pipe member 39a and the fourth pipe member 39b are held by holding portions 24 that extend from the support frames 17.

[0046] FIG. 2 is a front view illustrating an outline of the overall configuration of the printer 1 according to the embodiment.

[0047] As shown in FIG. 2, using the support frame 17 of the printer 1 as a reference, the first holder units 3 are provided on the front side thereof, whereas the second holder units 40 are provided on the rear side thereof. As described earlier, the first holder units 3 are provided so as to be capable of sliding relative to the first pipe member 7a and the second pipe member 7b serving as the guide member 7, both ends of which are held by the sub-frame 35. Likewise, the second holder units 40 are provided so as to be capable of sliding relative to the third pipe member 39a and the fourth pipe member 39b serving as the guide member 39, both ends of which are held by the holding portions 24.

[0048] The method for immobilizing the second holder units 40 relative to the third pipe member 39a and the fourth pipe member 39b is the same as the method for immobilizing the first holder units 3 relative to the first pipe member 7a and the second pipe member 7b. Accordingly, the following will describe a structure for immobilizing the first holder units 3 relative to the first pipe member 7a and the second pipe member 7b, and descriptions of a structure for immobilizing the second holder units 40 relative to the third pipe member 39a and the fourth pipe member 39b will be omitted.

[0049] FIG. 3 is a perspective view illustrating a rolled medium holder device 51 in the medium feed-out mechanism 26 according to this embodiment.

[0050] As shown in FIG. 3, the medium feed-out mechanism 26 includes the rolled medium holder device 51. The rolled medium holder device 51 includes: the first pipe member 7a and the second pipe member 7b serving as the guide member 7; the first holder units 3 that include the shaft portion 13; and a stopper member 47 (see FIGS. 4 through 6).

[0051] Although details will be given later, the first holder units 3 can be slid relative to the first pipe member 7a and the

second pipe member 7b by rotating knob portions 36 of screws 50 that include a knob (see FIG. 6) in the direction that loosens the screws. Specifically, base portions 4 provided below the first holder units 3 slide relative to the first pipe member 7a and the second pipe member 7b. Meanwhile, the configuration is such that the first holder units 3 can be immobilized relative to the first pipe member 7a and the second pipe member 7b by rotating the knob portions 36 in the direction that tightens the screws. Accordingly, it is possible to adjust the position of the pair of first holder units 3 based on the widthwise size of the rolled medium R.

[0052] Note that the lifting mechanisms 2 are provided between the pair of first holder units 3 so as to be capable of sliding relative to the first pipe member 7a and the second pipe member 7b. It is not necessary to configure the lifting mechanisms 2 so as to be capable of switching between being slidable and being immobilized relative to the first pipe member 7a and the second pipe member 7b. All that is necessary is for the lifting mechanisms 2 to be capable of sliding to below the vicinity of the ends of the rolled medium R based on the size of the rolled medium R and capable of lifting the ends of the rolled medium R.

[0053] Next, the structure of the stopper member 47 of the rolled medium holder device 51 will be described in detail.

[0054] FIG. 4 is a cross-sectional perspective view, seen at an angle from above, illustrating the stopper member 47 and so on of the rolled medium holder device 51 according to this embodiment. Meanwhile, FIG. 5 is a cross-sectional perspective view, seen at an angle from below, of the stopper member 47 and so on. Furthermore, FIG. 6 is a cross-sectional view, seen from the side, of the stopper member 47.

[0055] As shown in FIGS. 4 through 6, the base portion 4 provided below the first holder unit 3 of the rolled medium holder device 51 is capable of sliding relative to the first pipe member 7a and the second pipe member 7b. The stopper member 47, which has, for example, a ring shape, is attached to the base portion 4, and of the first pipe member 7a and the second pipe member 7b, the first pipe member 7a is passed through the interior of the ring of the stopper member 47. Here, the stopper member 47 is formed so as to be capable of making surface contact with the outer circumference of the first pipe member 7a.

[0056] The configuration is such that by rotating the knob portion 36 of the screw 50 that includes a knob (see FIG. 6) as described earlier, the magnitude of a pressing force F (see FIG. 6), exerted on the first pipe member 7a with which the stopper member 47 makes contact, changes. When the magnitude of the pressing force F is greater than a predetermined magnitude, the friction increases, and the first holder units 3 are immobilized relative to the first pipe member 7a (and the second pipe member 7b) as a result. On the other hand, when the magnitude of the pressing force F is less than a predetermined magnitude, the friction decreases, and the first holder units 3 can be slid relative to the first pipe member 7a and the second pipe member 7b as a result.

[0057] This structure will be described in detail hereinafter.

[0058] A first hole portion 44 to a third hole portion 46 are formed in the base portion 4 (see FIG. 5). Parts of the ring-shaped stopper member 47 are fitted into the respective first hole portion 44 to the third hole portion 46, and the stopper member 47 is attached to the base portion 4 as a result. Meanwhile, a first contact portion 48 and a second contact portion 49 are formed in the stopper member 47.

[0059] Of these, the first contact portion 48 both fits with the first hole portion 44 and makes contact at the first hole portion 44 or in the vicinity thereof (see FIG. 6). Meanwhile, the second contact portion 49 is formed in the stopper member 47, along the ring shape that corresponds to the circumferential direction of the first pipe member 7a, in a different position than the first contact portion 48. Furthermore, the second contact portion 49 is provided so as to make contact with the flat tip of the aforementioned screw 50 that includes a knob. The aforementioned screw 50 that includes a knob is provided in the base portion 4, and a female screw portion 10 is embedded in the base portion 4 in the area where the screw 50 is provided. Accordingly, the tip of the screw 50 that includes a knob is moved by the knob portion 36 being manipulated and the screw 50 that includes a knob rotating as a result. The position of the second contact portion 49 can be moved as a result.

[0060] In addition, a first positioning member 41 to a third positioning member 43 are provided in the base portion 4. Of these, the first positioning member 41 and the second positioning member 42 make contact with the outer circumference of the first pipe member 7a with which the stopper member 47 makes contact. The first positioning member 41 is disposed so as to be capable of precisely setting the position of the first holder unit 3 relative to the first pipe member 7a in the Z axis direction, which corresponds to the vertical direction.

[0061] Meanwhile, the second positioning member 42 is disposed so as to be capable of precisely setting the position of the first holder unit 3 relative to the first pipe member 7a in the Y axis direction. On the other hand, the third positioning member 43 is configured so as to make contact with the outer circumference of the second pipe member 7b, with which the stopper member 47 does not make contact. The third positioning member 43 is disposed so as to be capable of precisely setting the attitude of the first holder unit 3 relative to the first pipe member 7a and the second pipe member 7b, which are centered on the X axis.

[0062] The screw 50 that includes a knob rotates as a result of the knob portion 36 being rotated in the direction that tightens the screw. As a result, the tip of the screw 50 that includes a knob moves toward the second contact portion 49 of the stopper member 47, presses on the second contact portion 49, and moves the second contact portion 49 in the direction of the arrow corresponding to the Y axis. Here, the first contact portion 48 makes contact with the first hole portion 44 of the base portion 4, or with the vicinity thereof, at a point A (see FIG. 6). Accordingly, the rotation of the stopper member 47 in the counter-clockwise direction central to the first pipe member 7a shown in FIG. 6 is limited.

[0063] Note that at a point B of the second contact portion 49, the direction in which the tip of the screw 50 that includes a knob presses on the second contact portion 49 as a result of the knob portion 36 being rotated in the direction that tightens the screw may be any direction as long as it has a vector component that corresponds to the counter-clockwise direction that follows the outer circumference of the first pipe member 7a and is central to the first pipe member 7a as shown in FIG. 6. This is because doing so makes it possible to increase the pressing force F at the segment between the point A and the point B, which will be described later.

[0064] Accordingly, in the segment of the stopper member 47 that is between the point A in the circumferential direction of the first pipe member 7a and the point B of the second

contact portion 49, a force that pulls outward between the points A and B is generated. As a result, the stopper member 47 makes surface contact with the outer circumference of the first pipe member 7a at the segment between the points A and B, which makes it possible to exert the pressing force F on the first pipe member 7a. Due to the pressing force F, the first holder unit 3 is immobilized relative to the first pipe member 7a (and the second pipe member 7b) as a result of the friction generated between the inner side of the ring of the stopper member 47 and the outer circumferential surface of the first pipe member 7a becoming greater than or equal to a predetermined magnitude.

[0065] As a result, in this state, the stopper member 47 makes surface contact with the outer circumferential surface of the first pipe member 7a, and thus there is no risk that the outer circumferential surface of the first pipe member 7a will be scratched. There is also no risk of dents or holes being formed in the hollow first pipe member 7a.

[0066] It should be noted that it is desirable for the stopper member 47 to be formed of a material that is flexible. Doing so makes it possible to ensure that the pressing force F is essentially uniform at the area where surface contact is made. As a result, the risk of the first pipe member 7a being scratched can be eliminated with certainty.

[0067] Furthermore, at this time, the direction of the pressing force F corresponds to a direction that is turned slightly upward from the direction of the arrow that corresponds to the Y axis. The reason for this is that when the tip of the screw 50 that includes a knob moves, the second contact portion 49 receives the force in the direction of the arrow that corresponds to the Y axis and moves in the direction of the arrow that corresponds to the Y axis. At this time, while the point A is immobilized, the point B moves, and thus the force acts so as to turn up the first pipe member 7a due to the shape of the inside of the ring.

[0068] Then, due to the pressing force F, the first pipe member 7a is pressed against the first positioning member 41 and the second positioning member 42. In other words, the configuration is such that the direction of the pressing force F is pressed on the first pipe member 7a toward an area in the circumferential direction of the first pipe member 7a that is between a point C, which is the area where the first positioning member 41 and the first pipe member 7a make surface contact, and a point D, which is the area where the second positioning member 42 and the first pipe member 7a make surface contact. At this time, the relationship between points A and B and points C and D should be a relationship in which the position of the segment between the points A and B and the position of the segment between the points C and D is symmetrical, or close to symmetrical, with the center of the first pipe member 7a used as a reference.

[0069] Here, the third positioning member 43 continually makes contact with the outer circumference of the second pipe member 7b due to the first holder unit 3's own weight. Accordingly, when the first holder unit 3 is immobilized, the position and orientation of the first holder unit 3 can be set with precision relative to the first pipe member 7a and the second pipe member 7b.

[0070] Meanwhile, the screw 50 that includes a knob rotates as a result of the knob portion 36 being rotated in the direction that loosens the screw. As a result, the tip of the screw 50 that includes a knob moves away from the second contact portion 49 of the stopper member 47, and moves the second contact portion 49 in the opposite direction as the

direction of the arrow corresponding to the Y axis. Accordingly, the pressing force F exerted on the first pipe member 7a by the stopper member 47 decreases. As a result, the friction generated between the inside of the ring of the stopper member 47 and the outer circumferential surface of the first pipe member 7a drops below the predetermined magnitude, and the first holder unit 3 can be slid relative to the first pipe member 7a and the second pipe member 7b.

[0071] Although this embodiment describes a configuration in which the magnitude of the pressing force F is changed by moving only the point B without moving the point A, it should be noted that the invention is not limited thereto. A configuration in which the magnitude of the pressing force F is changed by moving both the point A and the point B may also be employed. As long as the stopper member 47 and the outer circumference of the first pipe member 7a make surface contact and the magnitude of the pressing force F is changed by moving at least one of the point A and the point B whose positions in the circumferential direction are different, any configuration may be employed without departing from the technical spirit of the invention.

[0072] In addition, although this embodiment describes the stopper member 47 as being formed in a ring shape, the stopper member 47 need not have a ring shape. As described earlier, as long as the magnitude of the pressing force F is changed by moving at least one of the point A and the point B whose positions in the circumferential direction are different, any configuration may be employed without departing from the technical spirit of the invention. In this embodiment, the ring shape is employed having taken into consideration the precision of the members when forming the stopper members. By using a ring shape, it is possible to essentially eliminate the influence of warping, deformation, and so on, as compared to a case in which a ring shape is not used.

[0073] Further still, although this embodiment describes the guide member 7 as being configured of the hollow first pipe member 7a and second pipe member 7b, the guide member 7 need not be hollow. The configuration in which the stopper member makes surface contact is particularly useful when there is a risk that the outer circumferential surface of the member will be scratched, damaged, and so on.

[0074] A rolled medium holder device 51 according to this embodiment includes: the guide member 7 that extends in the width direction X of the rolled medium R; the first holder unit 3, including the shaft portion 13 that holds the roll-shaped rolled medium R, serving as a holder unit that is slidable relative to the guide member 7; and the stopper member 47, provided in the first holder unit 3, that makes surface contact with the outer circumferential surface of the guide member 7. Here, the pressing force F exerted on the outer circumferential surface of the guide member 7 by the stopper member 47 between two different points A and B of the stopper member 47 in the circumferential direction of the guide member 7 can be adjusted; the position of the first holder unit 3 can be immobilized relative to the guide member 7 by increasing the pressing force F; and the first holder unit 3 can be slid relative to the guide member 7 by reducing the pressing force F from the immobilized state.

[0075] In addition, in this embodiment, the guide member 7 is hollow.

[0076] Furthermore, in this embodiment, the magnitude of the pressing force F is changed by changing the position of point B of at least one of the points A and B in the stopper member 47.

[0077] Further still, in this embodiment, the stopper member 47 is formed of a flexible material.

[0078] In addition, in this embodiment, the guide member 7 and the first holder unit 3 make contact at at least two points, or the points C and D, in the circumferential direction, and the pressing force F is exerted toward the area between the points C and D.

[0079] Further still, in this embodiment, the stopper member 47 is formed in a ring shape.

[0080] The printer 1 serving as a recording apparatus according to this embodiment includes: the medium feed-out mechanism 26, serving as a feed-out mechanism capable of feeding out the roll-shaped rolled medium R downstream in a feed direction; the recording unit 28 that records onto the feed-out rolled medium R; and the take-up mechanism 37 that takes up the rolled medium R that has been recorded onto. Here, at least one of the medium feed-out mechanism 26 and the take-up mechanism 37 includes the rolled medium holder device 51.

Other Embodiments

[0081] FIG. 7 is a cross-sectional view, seen from the side, illustrating a stopper member 52 and the vicinity thereof according to another embodiment.

[0082] As shown in FIG. 7, the stopper 52 according to this embodiment is formed, when viewed from the axial direction of the first pipe member 7a, so as to have an approximate C shape, or in other words, an approximate arc shape that follows the outer circumference of the first pipe member 7a.

[0083] Note that the other members are the same as those described in the aforementioned embodiment, and thus the same reference numerals will be assigned thereto and descriptions thereof will be omitted.

[0084] The stopper member 52 according to this embodiment includes an area between points A and B, whose positions in the circumferential direction are different, on which the pressing force F is exerted. To rephrase, the stopper member 52 is not formed in the vicinity of the point D, unlike the stopper member 47 according to the aforementioned embodiment (see FIG. 6).

[0085] Even in this case, the same effects as those described in the aforementioned embodiment can be achieved.

[0086] Note that the invention is not intended to be limited to the aforementioned embodiments, and many variations are possible within the scope of the invention as disclosed in the appended aspects; it goes without saying that such variations also fall within the scope of the invention.

What is claimed is:

1. A rolled medium holder device comprising:
 - a guide member that extends in the width direction of a rolled medium;
 - a holder unit, including a shaft portion that holds the roll-shaped rolled medium, that is slidable relative to the guide member; and
 - a stopper member, provided in the holder unit, that makes surface contact with the outer circumferential surface of the guide member,
 wherein a pressing force exerted on the outer circumferential surface of the guide member by the stopper member between two different points of the stopper member in the circumferential direction of the guide member can be adjusted;

the position of the holder unit can be immobilized relative to the guide member by increasing the pressing force; and

the holder unit can be slid relative to the guide member by reducing the pressing force from the immobilized state.

2. The rolled medium holder device according to claim 1, wherein the guide member is hollow.

3. The rolled medium holder device according to claim 1, wherein the magnitude of the pressing force is changed by changing the position of at least one of the two points in the stopper member.

4. The rolled medium holder device according to claim 1, wherein the stopper member is formed of a flexible material.

5. The rolled medium holder device according to claim 1, wherein the guide member and the holder unit make contact at at least two points in the circumferential direction, and the pressing force is exerted toward the area between the two points.

6. The rolled medium holder device according to claim 1, wherein the stopper member is formed in a ring shape.

7. A recording apparatus comprising:

a feed-out mechanism capable of feeding out a roll-shaped rolled medium downstream in a feed direction;

a recording unit that records onto the fed-out rolled medium; and

a take-up mechanism that takes up the rolled medium that has been recorded onto,

wherein at least one of the feed-out mechanism and the take-up mechanism includes the rolled medium holder device according to claim 1.

8. A recording apparatus comprising:

a feed-out mechanism capable of feeding out a roll-shaped rolled medium downstream in a feed direction;

a recording unit that records onto the fed-out rolled medium; and

a take-up mechanism that takes up the rolled medium that has been recorded onto,

wherein at least one of the feed-out mechanism and the take-up mechanism includes the rolled medium holder device according to claim 2.

9. A recording apparatus comprising:

a feed-out mechanism capable of feeding out a roll-shaped rolled medium downstream in a feed direction;

a recording unit that records onto the fed-out rolled medium; and

a take-up mechanism that takes up the rolled medium that has been recorded onto,

wherein at least one of the feed-out mechanism and the take-up mechanism includes the rolled medium holder device according to claim 3.

10. A recording apparatus comprising:

a feed-out mechanism capable of feeding out a roll-shaped rolled medium downstream in a feed direction;

a recording unit that records onto the fed-out rolled medium; and

a take-up mechanism that takes up the rolled medium that has been recorded onto,

wherein at least one of the feed-out mechanism and the take-up mechanism includes the rolled medium holder device according to claim 4.

11. A recording apparatus comprising:

a feed-out mechanism capable of feeding out a roll-shaped rolled medium downstream in a feed direction;

a recording unit that records onto the fed-out rolled medium; and

a take-up mechanism that takes up the rolled medium that has been recorded onto,

wherein at least one of the feed-out mechanism and the take-up mechanism includes the rolled medium holder device according to claim 5.

12. A recording apparatus comprising:

a feed-out mechanism capable of feeding out a roll-shaped rolled medium downstream in a feed direction;

a recording unit that records onto the fed-out rolled medium; and

a take-up mechanism that takes up the rolled medium that has been recorded onto,

wherein at least one of the feed-out mechanism and the take-up mechanism includes the rolled medium holder device according to claim 6.

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