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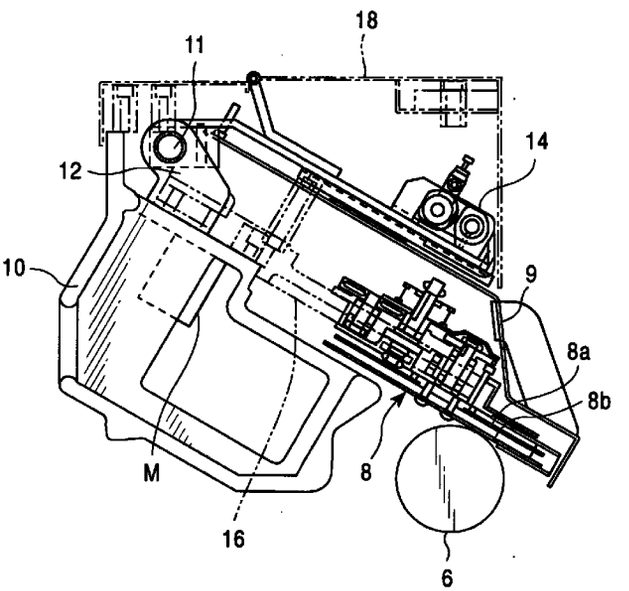
## (54) Take-up winder

(57) To provide a take-up winder comprising plural traverse devices (8) disposed in the axial direction of bobbin holders (1), wherein the traverse devices can be maintained and inspected easily, each traverse device is installed on a common supporting member (16) that is mounted on a body (10) in such a way that it can be moved to a position at which maintenance can be performed.

FIG. 2

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## Description

### Field of the Invention

**[0001]** The present invention relates to a take up winder.

### Background of the Invention

**[0002]** In a take-up winder that holds plural bobbins in a common bobbin holder, plural traverse devices are usually disposed in the axial direction of the bobbin holder, and plural filament yarns pass through the respective traverse devices and are guided by and wound around the respective bobbins. Thus, each traverse device can traverse and adequately wind the respective yarn.

**[0003]** To periodically perform maintenance on and inspect the traverse devices of the winder, the traverse devices assembled on the body using bolts and so on must be removed by loosening the bolts. Subsequently, the traverse devices must be mounted on the body using the bolts again. This operation is not easy, as it must be repeated for each of the traverse devices, requiring a large amount of time and labor.

**[0004]** Thus, it is an object of the present invention to provide a take-up winder comprising plural traverse devices disposed in the axial direction of bobbin holders, wherein the traverse devices can be maintained and inspected easily.

### Summary of the Invention

**[0005]** In the present invention, each traverse device is installed on a common supporting member and the supporting member is mounted on a body in such a way that it can be moved to a position at which maintenance can be performed. Specifically, the supporting member is provided above a touch roller that contacts bobbins held by a bobbin holder, and the supporting member is mounted on the body in such a way as to be able to move toward and away from the touch roller. The supporting member remains preferably in a maintenance position. More preferably, the supporting member is removably mounted on the body. Even more preferably, a driving source for driving the traverse devices is provided on the supporting member. In addition, a device for moving yarn out of the traversing rage is preferably mounted on the cover for the traverse devices, and the cover is closably mounted on the body in such a way as to be moved to a position at which maintenance can be performed. Further preferably, the the traverse devices are individually removabe from the supporting member.

### Brief Description of the Drawings

**[0006]**

Figure 1 is a perspective view showing a embodiment of the present invention.

Figure 2 is a front view of the winder shown in Figure 1.

Figure 3 is a front view showing that the top cover shown in Figure 2 in an open state.

Figure 4 is a front view showing that the cover of the traverse device as shown in Figure 2 in an open state.

Figure 5 is a front view showing that the supporting member of the traverse device shown in Figure 2 in an open state.

Figure 6 is a explanatory drawing showing a mounting configuration of the cover and supporting member of the traverse device shown in Figure 1.

### Detailed Description of the Preferred Embodiments

**[0007]** An embodiment of the present invention is described.

**[0008]** Figure 1 shows a turret type take-up winder having a pair of bobbin holders 1, 2. The bobbin holders 1, 2 hold bobbins 3, 4, and each have one end attached to and supported by a turret mechanism 5. plural bobbins 3 are fitted on and held by one of the bobbin holders 1. Furthermore, a touch roller 6 of a specified diameter is located above the bobbins 3 in such a way as to contact each bobbin 3, and plural filament yarns 7 pass along the touch roller 6 and are guided by and wound around the respective bobbins 3. Empty bobbins 4 are fitted on and held by the other bobbin holder 2. Thus, after the yarns 7 have been wound, a driving mechanism can be used to drive the turret mechanism 5 to rotate each of the bobbin holders 1, 2 through 180 ° , thereby enabling the plural yarns 7 to be wound around the empty bobbins 4.

**[0009]** As shown in Figure 2, the winder has plural traverse devices 8. Each traverse device 8 has two rotors, each including plural blades 8a, 8b, and the plural blades 8a, 8b of the respective rotors are located on two planes of an upper plane and a lower plane, and the two rotors are reversely rotated to cause the blades 8a, 8b positioned upward and downward to traverse the yarn. plural traverse devices 8 are provided above the touch roller 6 and arranged in the axial direction of the bobbin holder 1. Furthermore, the traverse devices 8 are provided with a common cover 9 of a specified size that is plate-shaped. The cover 9 is closably mounted on a body 10 so as to allow maintenance to be per-

formed easily on the traverse device 8 and so on. That is, the cover 9 can be moved in a position suitable for maintenance.

**[0010]** According to this embodiment, a supporting shaft 11 of a specified length is used to mount the cover 9 and is located behind the traverse device 8 so as to extend in parallel with the touch roller 6 and bobbin holder 1, and both ends of the supporting shaft 11 are fixed and supported by a bracket 12. Furthermore, as shown in Figure 6, a pair of mounting plates 13 are provided at the rear edge of the cover 9 at an interval, and their tips are bent like sleeves and rotatably fitted on the supporting shaft 11. Thus, the supporting shaft 11 of the body 10 supports the cover 9 for the traverse devices 8, and when manually lifted, the cover 9 for the traverse devices 8 rotates around the supporting shaft 11 in the counterclockwise direction as shown in Figure 2 and is thus opened. The cover 9 for the traverse devices 8 can be closed by rotating it around the supporting shaft 11 in the clockwise direction as sown in Figure 2. Thus, the cover 9 for the traverse devices 8 is closably mounted on the body 10. The cover 9 can be held in a position in which it is fully opened (maintenance position).

**[0011]** According to this embodiment, a shifting apparatus 14 is provided for each traverse device 8 and is installed on the cover 9 for the traverse devices 8. The shifting apparatus 14 shifts the yarn 7, and is composed of a means for removing the yarn 7 from the traverse device 8 and a means for moving the yarn 7 out of traversing rage to move it to a slit position of the bobbin. In connection with this composition, a slit 15 is formed in the empty bobbin 4, and after the yarn 7 has been wound and the turret mechanism 5 rotates the bobbin holders 1, 2, each shifting apparatus 14 shifts the respective yarn 7, which is thus guided to and inserted into the slit 15 in the empty bobbin 4. Consequently, each yarn 7 can be wound around the empty bobbin 4. The configuration of the shifting apparatus 14 is commonly known, so its description is omitted.

**[0012]** Furthermore, each of the traverse devices 8 of this winder is installed on a common supporting member 16. The supporting member 16 is plate-shaped, of a specified size, and closably and removably mounted on the body 10 in such a way as to cause the touch roller 6 and the traverse device 8 to move toward and away from other in order to allow maintenance to be performed on the bottom surface of the the traverse device 8 and so on. That is, the supporting member 16 is movable to the maintenance position for maintenance. According to this embodiment, in the supporting member 16 of the traverse divice 8, each traverse device 8 is removably installed on the supporting member 16.

**[0013]** Furthermore, two pairs of hooks 17 are provided at the rear edge of the supporting member 16 at an interval, and at positions corresponding to the pairs of hooks 17, two pairs of outer circumferential grooves are formed in the supporting shaft 11 of the body 10, and each hook 17 is rotatably fitted in the outer circumferential groove. Thus, like the cover 9 for the traverse devices 8, the supporting member 16 of the traverse devices 8 is supported by the supporting shaft 11 of the body 10, and when manually lifted, the supporting member 16 of the traverse devices 8 rotates around the supporting shaft 11 in the counterclockwise direction as shown in Figure 2, and is thus opened. The supporting member 16 of the traverse devices 8 can be closed by rotating it around the supporting shaft 11 in the clockwise direction as shown in Figure 2. Furthermore, each hook 17 can be detached from the supporting shaft 11 to remove the supporting member 16. Thus, the supporting member 16 of the traverse devices 8 is closably ad removably mounted on the body 10.

**[0014]** In this manner, the traverse device 8 can be moved separately from the shifting apparatus 14 and removed from the body 10. The supporting member 16 can also be held in a fully open position (maintenance position). A motor M that is a driving source common to the plural traverse devices 8 is mounted on the supporting member 16 so as to be removed from the body 10 integrally with the traverse device 8.

**[0015]** In addition, the cover 9 for the traverse devices 8 is covered by a top cover 18 that is removably attached to the body 10 with a press stud. As shown in Figure 3, the top cover 18 can be opened as necessary. Furthermore, plural guide grooves 19 are provided in the top cover 18 and the cover 9 for the traverse devices 8. The yarn 7 is inserted into the guide groove 19, passes through the traverse device 8, is guided by the touch roller 6 and bobbin 3, and wound on the respective bobbin 3. As a result, each traverse device 8 can traverse the respective yarn 7 to wind it adequately.

**[0016]** Thus, in this winder, when the periodic maintenance and inspection are to be performed on traverse devices 8, the top cover 18 is removed from the body 10 as shown in Figure 4. Subsequently, by rotating the cover 9 for the traverse devices 8 around the supporting shaft 11 to open it, the traverse devices 8 can be simultaneously maintained and inspected. This configuration does not require the cover for the traverse devices to be removed and mounted again, and it does not require said operation to be performed for each traverse device, making operation easy.

**[0017]** As shown in Figure 5, the supporting member 16 for the traverse devices 8 can be rotated around the supporting shaft 11 and opened, and the section between the traverse devices 8 and the touch roller 8, and all the traverse devices 8 can be maintained and inspected. In addition, if the yarn winds around the bottom surface of the traverse device 8, the wound yarn can be removed easily. If any traverse device 8 becomes defective, the supporting member 16 of the traverse devices 8 can be removed from the body 10. Consequently, only the defective traverse device 8 can be removed from the supporting member 16 and repaired or replaced as necessary. When the supporting member 16 is removed from the body 10, it can be

removed together with the driving source M for the traverse device 8, enabling the operation of the traverse device 8 to be adjusted elsewhere. In addition, the traverse device 8 and the shifting apparatus 14 can be moved separately (opened or closed), enabling maintenance work to be performed easily.

**[0018]** As described above, according to the present invention, when the traverse devices 8 of the take-up winder are to be maintained or inspected, the supporting member 16 for the traverse devices 8 can be opened as required so that all traverse devices 8 can be maintained and inspected. Thus, the required operation is easy.

**[0019]** If any traverse device 8 becomes defective, the supporting member 16 for the traverse devices 8 can be removed from the body 10 so that the defective device 8 can be repaired or replaced as necessary.

**[0020]** The cover 9 for the traverse devices 8 is opened as required to allow the traverse devices 8 to be maintained and inspected.

## Claims

1. A take-up winder comprising plural traverse devices disposed in the axial direction of bobbin holders characterized in that all of said traverse devices are installed on a common supporting member that is mounted on a body in such a way as to enable it to be moved to a position at which maintenance can be performed.

2. A take-up winder according to claim 1 characterized in that said supporting member is removably mounted on the body.

3. A take-up winder according to claim 1 or claim 2 characterized in that a device for moving yarn out of a traversing range is mounted on the cover of the traverse devices, and in that the cover is mounted on the body in such a way as to enable it to be moved to a position at which maintenance can be performed.

4. A take-up winder according to any one of claims 1 to 3 characterized in that a drive source for the traverse device is provided on the supporting member.

5. A take-up winder according to any one of claims 1 to 4 characterized in that the traverse devices can be individually removed from the supporting member.

6. A take-up winder according to any one of claims 1 to 5 characterized in that each traverse device uses blades to traverse yarn.

FIG. 1

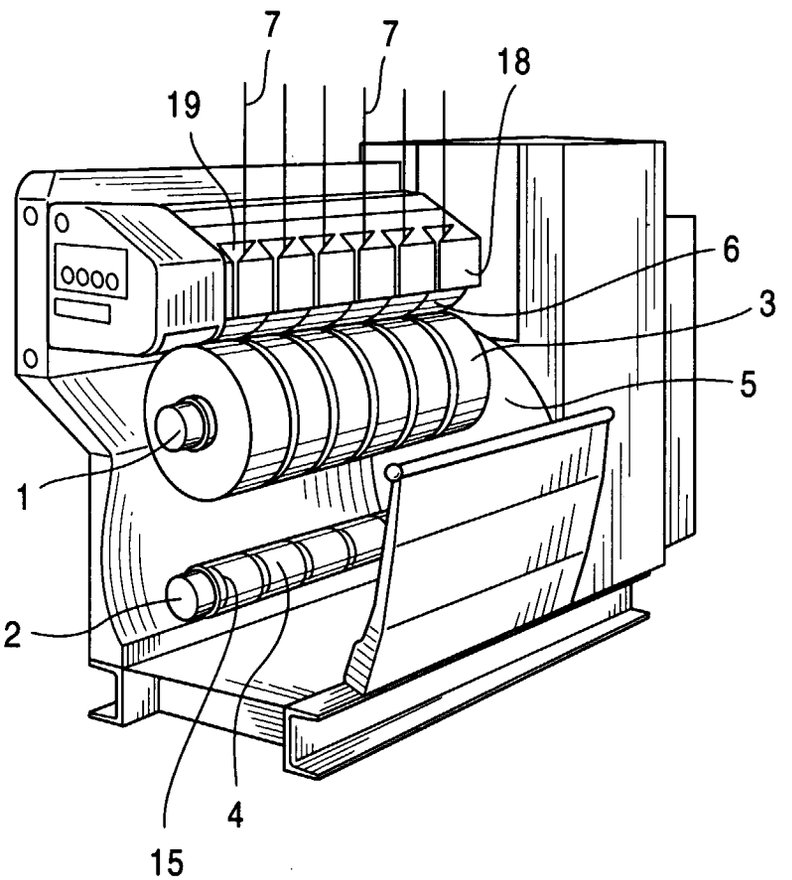


FIG. 2

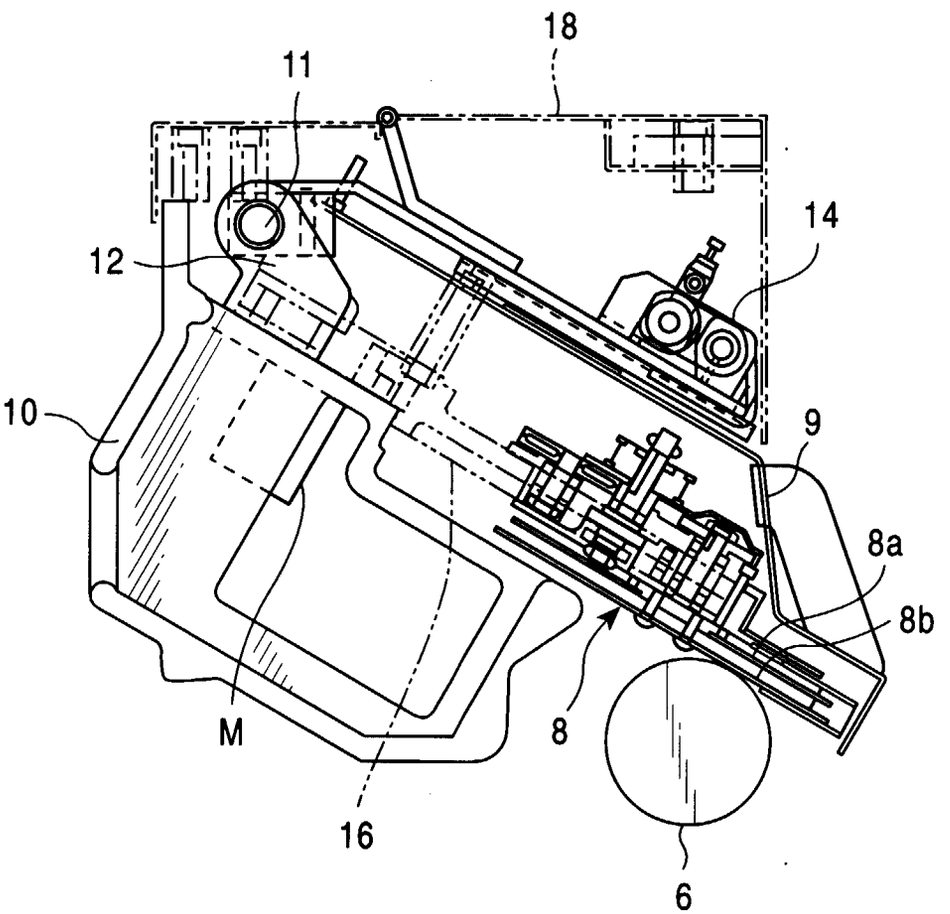


FIG. 3

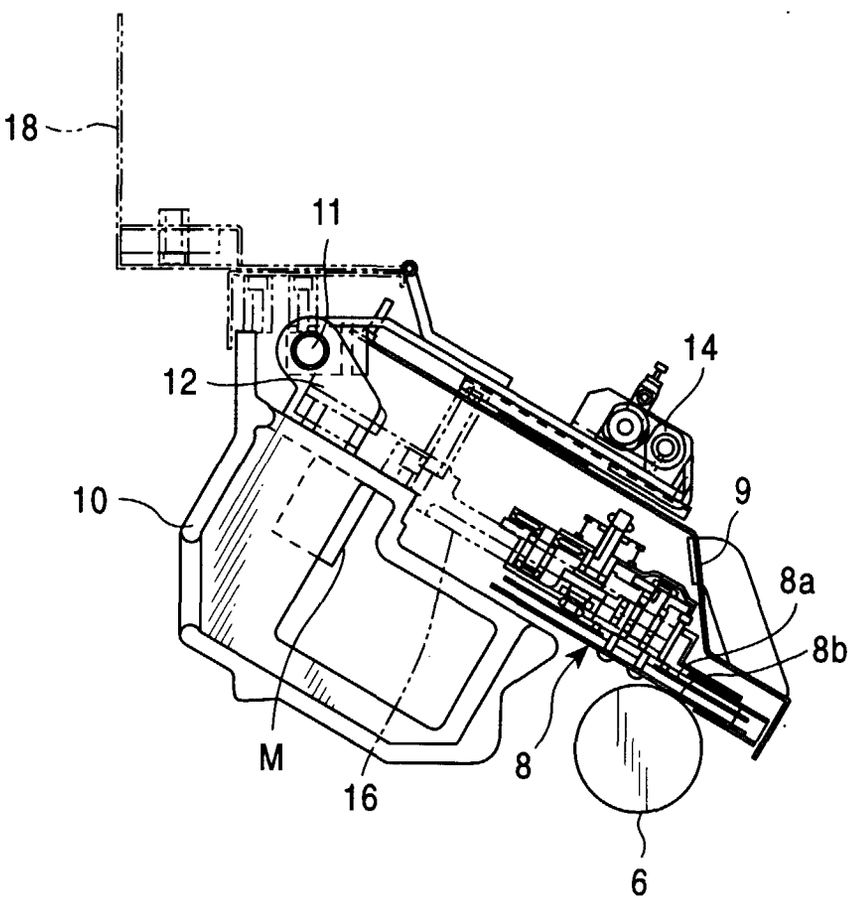


FIG. 4

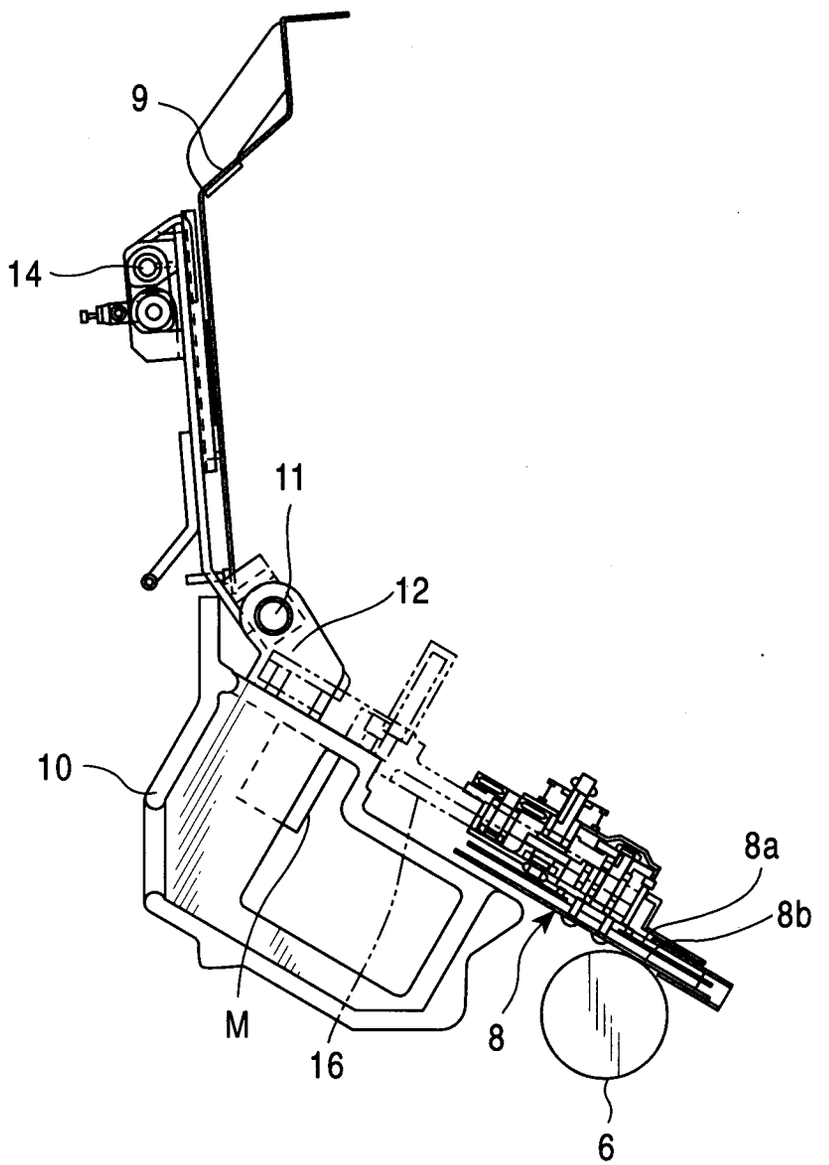


FIG. 5

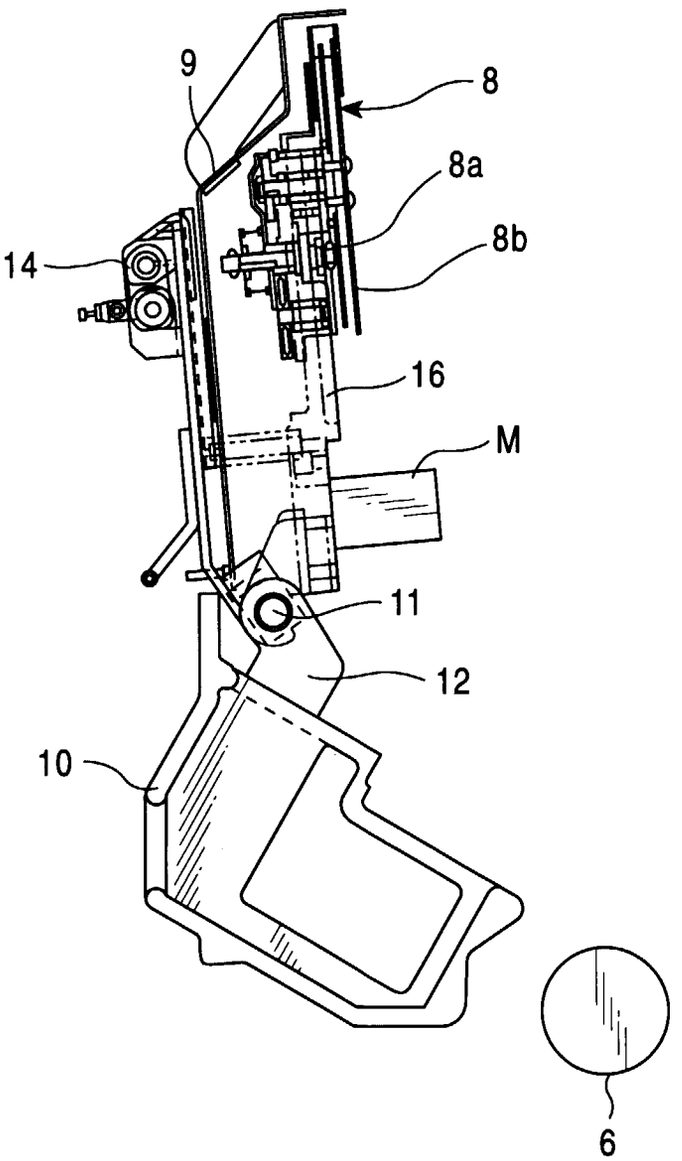
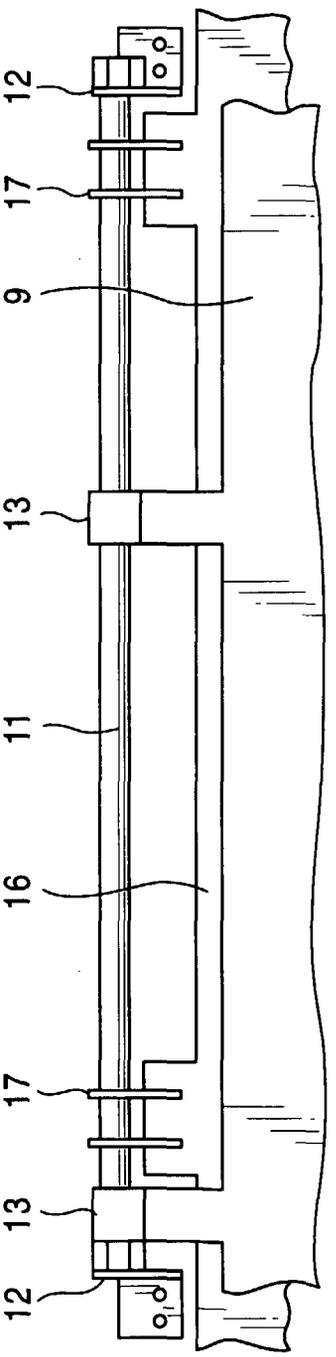


FIG. 6



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Application Number
EP 98 11 7739

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| Place of search | Date of completion of the search | Examiner |
|---|---|---|
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