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(54) **PANEL CURTAIN**

FLÄCHENVORHANG

RIDEAU DE PANNEAU

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Description

Field of the Invention

[0001] The present invention relates to a curtain, especially to a panel curtain.

Description of Related Art

[0002] Refer to Fig. 17, a conventional panel curtain 40 includes a support base 41, a plurality of rail channels 42, a plurality of sliding rails 43, a plurality of panels 44 and a cord 45. The rail channels 42 are disposed on the support base 41 and spaced from each other (there are three in the figure) while each of the sliding rails 43 is mounted on the respective rail channel 42 correspondingly. Each of the sliding rails 43 is provided with two pulleys 431 on top thereof and mounted in the rail channel 42 by the two pulleys 431. The panels 44 are mounted on the sliding rails 43 respectively. The cord 45 is disposed on the support base 41 for driving one of the sliding wheels 431. A plurality of limiting blocks 432 is arranged at the sliding rails 43 respectively in a staggered manner for limiting movement among the sliding rails 43.

[0003] However, the above structure of the conventional panel curtain still has certain shortcomings. The main one is that the sliding rail 43 is slidably mounted in the rail channel 42 of the support base 41 by means of the pulleys 431 so that the size of the rail channel 42 of the support base 41 must be increased in order to match the size of the sliding wheels 431. Thus the production costs and the packaging volume of the support base 41 are increased. At the same time, the assembly is more difficult.

[0004] Thus, there is room for improvement and there is a need to provide a novel panel curtain.

[0005] Patent application publication GB 2442200 A discloses a panel curtain having the features of the preamble of claim 1. The panel curtain known from patent application publication EP 1859710 A1 comprises a length adjustable upper track. A further panel curtain is known from patent specification US 5598880 A. In patent application publication GB 2431684 A a sliding door is described.

SUMMARY OF THE INVENTION

[0006] Therefore, it is a primary object of the present invention to provide a panel curtain that overcomes the above shortcomings of the conventional panel curtains.

[0007] In order to achieve the above object, a panel curtain according to the present invention has the features of claim 1. Further embodiments are the subject-matter of dependent claims. The panel curtain according to the invention includes an upper track, at least one rail set and a plurality of panels. The upper track is composed of an inner track and an outer track, whereas the inner and outer track are inserted into each other in such a manner that the upper track is telescopically adjustable in length. Two rail channels are disposed on the inner track and the outer track, respectively at the same side and communicating with each other. A plurality of clips is arranged at the top of the upper track. An assembly portion is disposed on the lateral surface of each of the clips and used for fixing two touch fasteners. A curtain fabric is affixed to the two touch fasteners. The rail set consists of a plurality of sliding rails arranged in parallel. Each of the sliding rails is provided with a positioning groove and a limiting groove that are disposed on two lateral surfaces thereof respectively and corresponding to each other while a panel groove is arranged at the bottom of the respective sliding rail. A sliding block is fixed on the distal end of the positioning groove of the respective sliding rail and a barrier piece is extending downward from the sliding block for covering one end of the panel groove. The sliding block is slidably mounted in the limiting groove of the adjacent sliding rail and a limiting block with a buffer spring is disposed on the front end of the limiting groove of the respective sliding rail while a swiveling stopper is pivotally mounted on the distal end of the limiting block. A connecting rib is disposed on the top of the respective sliding rail, whereas a plurality of punch holes is arranged on the respective connecting rib in turn. A connecting sliding block is mounted on the front end of the connecting rib of the respective sliding rail and is provided with a sliding locking portion and a connecting portion. The length of the connecting portion varies depending on the position of the respective sliding rail among the sliding rails in parallel. Thereby the respective connecting sliding block is fixed on the connecting rib of the corresponding sliding rail by the connecting portion in such a manner that the sliding locking portions are aligned and abut against one another. Moreover, the frontmost connecting sliding block is disposed on the sliding rail that is defined as the first one according to the sequential arrangement and is further provided with a cord binding portion while a positioning block is arranged at the distal end of the connecting rib of the sliding rail that is defined as the last one according to the sequential arrangement. The positioning block is further fixed and limited on the upper track. A panel holding portion is formed on the top of the respective panel and slidably mounted in the panel groove of the respective sliding rail in such a manner that the panel holding portion is limited and positioned by the barrier piece and the stopper on two ends of the respective panel groove.

[0008] Preferably, a snapping portion is formed on the top of the inner track and the top of the outer track respectively. Each of the clips is provided with a locking portion and an assembly portion vertically extending from the front end of the clip. The assembly portion is formed in such a manner that two limiting channels are arranged correspondingly on the upper and lower front side for limiting and positioning the two touch fasteners.

[0009] Preferably, the positioning block is provided with a sliding locking portion that is slidably mounted in

the rail channel of the upper track correspondingly. A packing piece is disposed at the sliding locking portion in such a manner that the packing piece is facing the opening of the rail channel. The packing piece is used in combination with a fastener and friction-locked by screwing the fastener.

[0010] Preferably, an insertion hole is arranged at the respective connecting sliding block in such a manner that the insertion hole is facing the opening of the rail channel. The Insertion hole is used in combination with a linking piece for connecting at least two connecting sliding blocks. Thus at least two sliding rails are linked.

[0011] Preferably, the linking piece is provided with at least two pins corresponding to the connecting sliding blocks.

[0012] Preferably, the sliding block is provided with two symmetrical limiting pieces facing the limiting groove of the adjacent sliding rail.

[0013] Preferably, the panel curtain includes two rail sets that are mounted on the outermost end of the inner track and the outermost end of the outer track respectively and linked to be moved toward each other for closing and away from each other for opening.

[0014] Preferably, the sliding rails of the two rail sets are not aligned and a gap is formed therebetween so that the two rail sets are staggered to be in a closed state when the first sliding rails thereof are leaning against each other. A staggering spring is arranged at the front end of the sliding rail located at the inner side for keeping the above two sliding rails in the staggered state when the sliding rails are staggered.

[0015] Preferably, the upper track is used in combination with a cord for sliding and moving the rail set.

[0016] Compared with prior art, the panel curtain of the present invention has the following advantages. A connecting sliding block is disposed on each of the sliding rails of the respective rail set and is provided with a connecting portion whose length varies depending on the order of the sliding rail among the sliding rails in parallel. The connecting portions are used for allowing the sliding locking portions to be aligned and mounted in the rail channel of the upper track after the connecting sliding blocks and the sliding rails being assembled. Thereby volume and size of the upper track are significantly decreased and the packaging volume is effectively reduced.

[0017] Moreover, a sliding block is fixed on the distal end of the positioning groove of the respective sliding rail and a barrier piece is extending downward from the sliding block for covering one end of the panel groove. At the other end of the panel groove, a limiting block is disposed on the front end of the limiting groove and is provided with a swiveling stopper for opening and closing the panel groove. Thereby the panel is limited and positioned simultaneously by the barrier piece and the stopper while being mounted in the panel groove, without falling off. When users intend to replace the panel, they just need to swivel the stopper. Thereby the panel is pulled out easily. The design helps the replacement of the panels and the panel curtain is more convenient to use.

[0018] Furthermore, the upper track is used in combination with a plurality of clips for mounting two touch fasteners. A curtain fabric is further affixed to the touch fasteners. While the panel curtain is installed and used, the upper track thereof can be covered and decorated by the curtain fabric for aesthetic purposes and enhancing consumers' purchase intention.

BRIEF DESCRIPTION OF THE DRAWINGS

[0019] The structure and the technical means adopted by the present invention to achieve the above and other objects can be best understood by referring to the following detailed description of the preferred embodiments and the accompanying drawings, wherein:

Fig. 1 is a perspective view of an embodiment according to the present invention;
Fig. 2 is an explosive view of an embodiment according to the present invention;
Fig. 3 is an explosive view of an embodiment from another angle according to the present invention;
Fig. 4 is a schematic drawing showing assembly of a panel of an embodiment according to the present invention;
Fig. 5 is a schematic drawing showing a panel limited by a stopper of an embodiment according to the present invention;
Fig. 6 is a schematic drawing showing a single sliding rail and a panel thereof of an embodiment according to the present invention;
Fig. 7 is a schematic drawing showing a curtain fabric being assembled on an embodiment according to the present invention;
Fig. 8 is a sectional view and two partial enlarged schematic drawings showing an embodiment in a stacked state according to the present invention;
Fig. 9 is a schematic drawing showing movement during extension of an embodiment being pulled according to the present invention;
Fig. 10 is a schematic drawing showing two sliding rails fixed by a linking piece of an embodiment according to the present invention;
Fig. 11 is a schematic drawing showing three sliding rails fixed by a linking piece of an embodiment according to the present invention;
Fig. 12 is a perspective view of another embodiment according to the present invention;
Fig. 13 is an explosive view of another embodiment according to the present invention;
Fig. 14 is an explosive view of another embodiment from another angle according to the present invention;
Fig. 15 is a schematic drawing showing another embodiment being pulled and extended according to the present invention;

Fig. 16 is a schematic drawing showing another embodiment closed in a staggered manner after being pulled and extended according to the present invention;

Fig. 17 is a schematic drawing of a prior art.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0020] In order to learn features and functions of the present invention, please refer to the following embodiments and the figures.

[0021] Refer to Fig. 1, Fig. 2 and Fig. 3, a panel curtain according to the present invention includes an upper track 10, at least one rail set 20 and a plurality of panels 30. The upper track 10 consists of an inner track 11 and an outer track 12 and is telescopically adjustable in length. Two rail channels 13 are disposed on the inner track 11 and the outer track 12, respectively, located at the same side of the inner and the outer tracks 11, 12 and communicating with each other. Two snapping portions 111, 121 are disposed on the top of the inner track 11 and the top of the outer track 12, respectively. A plurality of clips 14 is arranged at the snapping portions 111, 121. The clip 14 consists of a locking portion 141 and an assembly portion 142 vertically extending from the front end thereof along a lateral surface of the upper track 10. The assembly portion 142 is formed in such a manner that two limiting channels 143 are arranged correspondingly on the upper and lower front side. Two touch fasteners 15 are fixed by the assembly portion 142 and a curtain fabric 16 is affixed to the touch fasteners 15.

[0022] The rail set 20 is composed of a plurality of sliding rails 21 arranged in parallel. Each of the sliding rails 21 is provided with a positioning groove 211 and a limiting groove 212 that are disposed on two lateral surfaces thereof respectively and corresponding to each other while a panel groove 213 is arranged at the bottom of the respective sliding rail 21. A sliding block 22 is fixed on the distal end of the positioning groove 211 of the respective sliding rail 21 and is composed of a barrier piece 221 extending downward therefrom for covering one end of the panel groove 213 and two symmetrical limiting pieces 222 facing the limiting groove 212 of the adjacent sliding rail 21. Each of the sliding blocks 22 is slidably mounted and limited in the limiting groove 212 of the adjacent sliding rail 21. A limiting block 23 with a buffer spring 231 is disposed on the front end of the limiting groove 212 of the respective sliding rail 21 and is provided with a bar 232 protruding therefrom to be outside the limiting groove 211 for pivotally connected with a swiveling stopper 233. A connecting rib 214 is disposed on the top of the respective sliding rail 21 and is provided with a plurality of punch holes in turn. A connecting sliding block 24 is mounted on the front end of the connecting rib 214 of the respective sliding rail 21 and is provided with a sliding locking portion 241 and a connecting portion 242. The length of the connecting portion 242 varies depending on the position of the respective sliding rail 21 among the sliding rails 21 in parallel. Thereby the connecting sliding block 24 is fixed on the connecting rib 214 of the corresponding sliding rail 21 by the connecting portion 242 in such a manner that the sliding locking portions 241 are aligned and abut against one another. An insertion hole 243 is disposed on the connecting sliding block 24 at the position facing the opening of the rail channel 13 and used in combination with a linking piece 25 for connecting at least two connecting sliding blocks 24. Thus the linked sliding rails 21 are moved together. Moreover, the frontmost connecting sliding block 24 is disposed on the sliding rail 21 that is defined as the first one according to the sequential arrangement and is further provided with a cord binding portion 244 while a positioning block 26 is arranged at the distal end of the connecting rib 214 of the sliding rail 21. The positioning block 26 is provided with a sliding locking portion 261 slidably mounted into the rail channel 13 of the upper track 10 correspondingly. A packing piece 262 is disposed on the sliding locking portion 261 in such a manner that the packing piece is facing the opening of the rail channel 13. The packing piece 262 is used in combination with a fastener 263 and friction-locked by screwing the fastener 263. Thereby the positioning block 26 is further fixed and limited on the upper track 10. A panel holding portion 31 is formed on the top of the respective panel 30 and is slidably mounted in the panel groove 213 of the respective sliding rail 21 in such a manner that the panel holding portion is limited and positioned by the barrier piece 221 and the stopper 233 on two ends of the respective panel groove 213.

[0023] Refer to Fig. 2-6, a sliding block 22 is fixed on the distal end of the positioning groove 211 and a limiting block 23 is disposed on the front end of the limiting groove 212 in each of the sliding rails 21 of the rail set 20. The sliding rails 21 are arranged in parallel and the sliding block 22 is slid from the distal end of the positioning groove 211 into the limiting groove 212 of the adjacent sliding rail 21 so as to connect the sliding rails 21 in turn. When the sliding rail 21 that is defined as the first one according to the sequential arrangement is pulled and the sliding block 22 thereon is moved along the limiting groove 212 of another sliding rail 21, the sliding block 22 abuts against the limiting block 23 on the front end of the limiting groove 212 so that the said another sliding rail 21 is also pulled out. Thus the sliding rails 21 are pulled one by one to be extended and thus linked. A panel 30 is mounted to the panel groove 213 on the bottom of the respective sliding rail 21 correspondingly. One end of the panel 30 is limited and positioned by the barrier piece 221 preset on the sliding block 22 while the other end thereof is stopped by swiveling of the stopper 233. Thereby the assembly of the panels 30 is completed. Users can change the pattern or color of the panels 30 easily. A connecting sliding block 24 is mounted on the respective sliding rail 21 of the rail set 20. The connecting portions 242 of the connecting sliding blocks 24 are disposed

on the front ends of the connecting ribs 214 above the sliding rails 21 respectively in turn according to the order of the sliding rails 21, allowing the sliding locking portions 241 of the connecting sliding blocks 24 to be arranged in parallel and aligned. The connecting sliding block 24 of the sliding rail 21 that is defined as the first one according to the sequential arrangement is further provided with a cord binding portion 244 while a positioning block 26 is mounted on the sliding rail 21 that is defined as the last one according to the sequential arrangement. The positioning block 26 is also provided with the sliding locking portion 261 that is aligned with the sliding locking portions 241 of the connecting sliding blocks 24. Thus the sliding rails 21 are mounted into the rail channel 13 of the upper track 10 by the sliding locking portions 241 of the connecting sliding blocks 24 and the sliding locking portion 261 of the positioning block 26 and are thereby able to slide therein. The positioning block 26 is tightly attached to and positioned on the inner wall of the rail channel 13 by the packing piece 262 used in combination with the fastener 263 so as to prevent the sliding rail 21 that is defined as the last one according to the sequential arrangement from being pulled out. The sliding rail 21 that is defined as the last one according to the sequential arrangement is fixed by the positioning block 26. Moreover, the upper track 10 is used in combination with a cord 17 for sliding and moving the rail set 20. The cord 17 is tied to the connecting sliding block 24 of the rail set 20 that is defined as the first connecting sliding block according to the sequential arrangement. Thus the assembly of the panel curtain is complete.

[0024] In addition, refer to Fig. 7, a plurality of clips 14 is disposed on the upper track 10. The clips 14 are fixed on the snapping portions 111, 121 of the inner and the outer tracks 11, 12 respectively by means of the locking portions 141 while the two touch fasteners 15 are fixed on the limiting channels 143 of the assembly portion 142. Thus the two touch fasteners 15 are fixed on the same clip 14 in a staggered manner and the length thereof is fine-adjustable along with telescopically adjusting the upper track 10. Lastly the curtain fabric 16 is provided for covering and decorating the upper track 10.

[0025] While in use, refer to Fig. 1 and Fig. 8-11, the panel curtain of the present invention is arranged at a preset wall surface of windows or French windows with the upper track 10 for adjusting indoor lighting. In the stacked state (without being extended), the panels 30 are moved along with the sliding rails 21 of the rail set 20 and held together on one end of the upper track 10. Now the sliding rails 21 are arranged in parallel and the panels 30 are stacked in layers. In order to pull out the panels 30 for blocking light, the sliding rail 21 that is defined as the first one according to the sequential arrangement is drawn and moved along the rail channel 13 by pulling the cord 17. At the same time, the sliding block 22 on the distal end of the positioning groove 211 is moved along the limiting groove 212 of another sliding rail 21 to abut against the limiting block 23 on the front end. Furthermore, the limiting block 23 is provided with the buffer spring 231 that is used for buffering force applied by the sliding rail 21 and the said another sliding rail 21 is also drawn and moved. Thereby the rest sliding rails 21 are slid out along the rail channel 13 one after another. Since the sliding rail 21 that is defined as the last one according to the sequential arrangement is firmly pressed onto and fixed on the upper track 10 by the positioning block 26, it will not be pulled out. Therefore the rail set 20 together with the panels 30 thereof is fully extended on the upper track 10 so that no light gets in.

[0026] Moreover, the upper track 10 consists of an inner track 11 and an outer track 12 assembled with each other so that the upper track 10 is telescopically adjustable in length. The number of the sliding rails 21 of the rail set 20 can be changed according to the length of the upper track 10. To shorten the total length of the inner track 11 and the outer track 12 assembled, it is also possible to use the rail set 20 in combination with the linking piece 25 for shortening the length of the sliding rails 21 with the panels 30 being extended. The linking piece 25 is provided with at least two pins 251 corresponding to the connecting sliding blocks 24. The two pins 251 are inserted into the insertion holes 243 of the two adjacent connecting sliding blocks 24 so that the two connecting sliding blocks 24 are drawn and slid synchronously. Thus the two adjacent sliding rails 21 and the panels 30 thereof are pulled out at the same time. The area of the panel curtain extended is reduced, by one sliding rail 21 and one panel 30. Thus the upper track 10 can be shortened and extended for blocking light. Or the upper track 10 in the original size is not fully extended/retracted for light control. In another embodiment, the linking piece 25 is provided with three pins 251. Also refer to Fig. 11, three sliding rails 21 and the panels 30 thereof of the rail set 20 are pulled out at the same time. Thus the area of the panel curtain extended is reduced by two sliding rails 21 and two panels 30.

[0027] To pull the extended panels 30 in such a way that the panels 30 stand one behind another for letting light in, the cord 17 is pulled in the opposite direction. The sliding rail 21 that is defined as the first one according to the sequential arrangement is moved back by sliding along the rail channel 13 of the upper track 10. While the mentioned sliding rail 21 is sliding in the opposite direction, the connecting sliding block 24 thereof is abutting against the connecting sliding block 24 of another sliding rail 21 (the adjacent one) so that the adjacent sliding rail 21 is pushed and drawn back. Thereby the sliding rails 21 are returned to the starting position in turn so that the panels 30 are moved to the side and stacked. Thus the purpose of light control in the room is achieved.

[0028] Refer to Fig. 12-16, another embodiment is revealed. It is possible that two rail sets 20 are mounted in the upper track 10. When the two rail sets 20 are pushed together, they are located at the outermost ends of the inner track 11 and the outer track 12 respectively. The connecting sliding block 24 on the sliding rail 21 of the

respective rail set 20 that is defined as the first sliding rail according to the sequential arrangement is provided with a cord binding portion 244 and tied with the cord 17. The sliding rail 21 that is defined as the last one according to the sequential arrangement is provided with a positioning block 26. The positioning block 26 is provided with a packing piece 262 and friction-locked on the upper track 10 by combining the packing piece 262 with a fastener 263. The coupling of the cord 17 enables the two rail sets 20 to move toward each other for closing the panel curtain or away from each other for opening the panel curtain while in use. The sliding rails 21 of the two rail sets 20 are not aligned and a gap is formed therebetween so that the two rail sets 20 are staggered to close the panel curtain when the sliding rails 21 that are defined as the first one according to the sequential arrangement are abutting against each other. A staggering spring 27 is arranged at the front end of the sliding rail 21 on the inner side for keeping the above two sliding rails 21 in the staggered state when the sliding sets 20 are staggered. Thereby the state of the two rail sets 20 in use is revealed.

[0029] In summary, the panel curtain according to present invention has the following advantages according to the structure of the above embodiments. A connecting sliding block 24 is disposed on each of the sliding rails 21 of the respective rail set 20 and is provided with a connecting portion 242 whose length varies depending on the order of the sliding rail 21 among the sliding rails in parallel. The connecting portions 242 are used for allowing the sliding locking portions 241 to be aligned and mounted in the rail channel 13 of the upper track 10 after the connecting sliding blocks 24 and the sliding rails 21 being assembled. Thereby volume and size of the upper track are dramatically decreased and the packaging volume is effectively reduced.

[0030] Moreover, a sliding block 22 is fixed on the distal end of the positioning groove 211 of the respective sliding rail 21 and a barrier piece 221 is extending downward from the sliding block 22 for covering one end of the panel groove 213. At the other end of the panel groove 213, a limiting block 23 is disposed on the front end of the limiting groove 212 and is provided with a swiveling stopper 233 for opening and closing the panel groove 213. Thereby the panel 30 is limited and positioned simultaneously by the barrier piece 221 and the stopper 233 while being mounted in the panel groove 21, without falling off. When users intend to replace the panel 30, they just need to swivel the stopper 233. Thereby the panel 30 is pulled out easily. The design helps the replacement of the panels 30 and the panel curtain is more convenient to use.

[0031] Furthermore, the upper track 10 is used in combination with a plurality of clips 14 for mounting two touch fasteners 15 and a curtain fabric 16 is further arranged at the touch fasteners 15. While the panel curtain is installed and used, the upper track 10 thereof can be covered and decorated by the curtain fabric 16 for aesthetic purposes so as to enhance consumers' purchase intention.

[0032] Additional advantages and modifications will readily occur to those skilled in the art. Therefore, the invention in its broader aspects is not limited to the specific details, and representative devices shown and described herein. Accordingly, various modifications may be made without departing from the scope of the general inventive concept as defined by the appended claims.

Claims

1. A panel curtain comprising:

at least one rail set (20) that includes a plurality of parallel sliding rails (21) each of which having a positioning groove (211) and a limiting groove (212) disposed on two lateral surfaces thereof respectively and corresponding to each other, a panel groove (213) arranged at the bottom thereof, and a connecting rib (214) disposed on top thereof and provided with a plurality of punch holes in turn;

a sliding block (22) that is fixed on the distal end of the positioning groove (211) of each sliding rail (21), and slidably mounted in the limiting groove (212) of the adjacent sliding rail (21);

a limiting block (23) that is disposed on the front end of the limiting groove (212) of each sliding rail (21);

a connecting sliding block (24) mounted on the front end of the connecting rib (214) of each sliding rail (21) and provided with a sliding locking portion (241) and a connecting portion (242) whose length varies depending on the position of the sliding rail (21) among the sliding rails (21) in parallel for fixing the connecting sliding block (24) on the connecting rib (214) of the corresponding sliding rail (21) and allowing the sliding locking portions (241) to be aligned and abut against one another;

the sliding rail (21) further provided with the frontmost connecting sliding block (24) that includes a cord binding portion (244); the sliding rail (21) that is defined as the last one according to the sequential arrangement further provided with a positioning block (26) that is arranged at the distal end of the connecting rib (214) thereof; and

a plurality of panels (30) each of which is provided with a panel holding portion (31) that is formed on the top thereof and slidably mounted in the panel groove (213) of the sliding rail (21)

characterised by

an upper track (10) having telescopically adjustable length and provided with an inner track (11), an outer track (12), and two rail channels (13) disposed on the inner track (11) and the outer track (12), respectively at the same side and

communicating with each other, and the positioning block is further fixed and limited on the upper track (10); and

a plurality of clips (14) arranged at the top thereof and each of which includes an assembly portion (142) disposed on the lateral surface thereof for fixing two touch fasteners (15) and a curtain fabric (16) affixed to the two touch fasteners (15);

wherein the sliding block (22) is provided with a barrier piece (221) extending downward therefrom for covering one end of the panel groove (213),

wherein the limiting block (23) is provided with a buffer spring (231) and a swiveling stopper (233) that is pivotally mounted on the distal end of the limiting block (23),

and wherein the panel holding portion is limited and positioned by the barrier piece (221) and the swivelling stopper (233) on two ends of the panel groove respectively.

2. The panel curtain as claimed in claim 1, wherein a snapping portion (111, 121) is formed on the top of the inner track (11) and the top of the outer track (12) respectively; the clip (14) is provided with a locking portion (141) and the assembly portion (142) vertically extending from the front end thereof; the assembly portion (142) is formed in such a manner that two limiting channels (143) are arranged correspondingly on the upper and lower front side for limiting and positioning the two touch fasteners (15).

3. The panel curtain as claimed in claim 1, wherein the positioning block (26) is provided with a sliding locking (22) portion slidably mounted in the rail channel (42) of the upper track (10) correspondingly, and a packing piece (262) disposed on the sliding locking portion (261) in such a manner that that packing piece (262) is facing the opening of the rail channel (13); the packing piece (262) is used in combination with a fastener (263) and friction-locked by screwing the fastener (263).

4. The panel curtain as claimed in claim 1, wherein an insertion hole (243) is arranged at the respective connecting sliding block (22) in such a manner that the insertion hole (243) is facing the opening of the rail channel (42); the insertion hole (243) is used in combination with a linking piece (25) for connecting at least two connecting sliding blocks (24) and allowing at least two sliding rails (21) to be linked.

5. The panel curtain as claimed in claim 4, wherein the linking piece (25) is provided with at least two pins corresponding to the connecting sliding blocks (24).

6. The panel curtain as claimed in claim 1, wherein the sliding block (22) is provided with two symmetrical limiting pieces (222) facing the limiting groove (212) of the adjacent sliding rail (21).

7. The panel curtain as claimed in claim 1, wherein the panel curtain includes two rail sets (20) that are mounted on the outermost end of the inner track (11) and the outermost end of the outer track (12) respectively and linked to be moved toward each other for closing and away from each other for opening while in use.

8. The panel curtain as claimed in claim 7, wherein the sliding rails (21) of the two rail sets (20) are not aligned and a gap is formed therebetween so that the two rail sets (20) are staggered to close the panel curtain when the first sliding rails (21) thereof are leaning against each other; a staggering spring (27) is arranged at the front end of the sliding rail (21) located at the inner side for keeping the two sliding rails (21) in the staggered state when the sliding sets (20) are staggered.

9. The panel curtain as claimed in claim 1, wherein the upper track (10) is used in combination with a cord (17) for sliding and moving the rail set (20).

Patentansprüche

1. Flächenvorhang umfassend:

mindestens einen Schienensatz (20), der eine Vielzahl von parallelen Gleitschienen (21) aufweist, von denen jede eine Positionierungsnut (211) und eine Begrenzungsnut (212) aufweist, die jeweils an ihren beiden Seitenflächen angeordnet sind und miteinander korrespondieren, eine Vorhangsnut (213), die an ihrem Boden angeordnet ist, und eine Verbindungsrippe (214), die an ihrer Oberseite angeordnet ist und ihrerseits mit einer Vielzahl von Stanzlöchern versehen ist;

einen Gleitblock (22), der an dem distalen Ende der Positionierungsnut (211) jeder Gleitschiene (21) befestigt ist und gleitend in der Begrenzungsnut (212) der benachbarten Gleitschiene (21) montiert ist;

einen Begrenzungsblock (23), der am vorderen Ende der Begrenzungsnut (212) jeder Gleitschiene (21) angeordnet ist;

einen Verbindungsgleitblock (24), der auf dem vorderen Ende der Verbindungsrippe (214) jeder Gleitschiene (21) montiert ist und mit einem Verriegelungsgleitabschnitt (241) und einem Verbindungsabschnitt (242) versehen ist, dessen Länge in Abhängigkeit von der Position der Gleitschiene (21) unter den parallel angeordneten Gleitschienen (21) variiert, um den Verbin-

dungsgleitblock (24) an der Verbindungsrippe (214) der entsprechenden Gleitschiene (21) zu befestigen und es zu ermöglichen, dass die Verriegelungsgleitabschnitte (241) aufeinander ausgerichtet werden und aneinander stoßen;
die Gleitschiene (21) ferner mit dem vordersten Verbindungsgleitblock (24) versehen ist, der einen Schnurbindungsabschnitt (244) enthält; die Gleitschiene (21), die als die letzte gemäß der sequentiellen Anordnung definiert ist, ferner mit einem Positionierungsblock (26) versehen ist, der an dem distalen Ende der Verbindungsrippe (214) davon angeordnet ist;
und eine Vielzahl von Platten (30), von denen jede mit einem Plattenhalteabschnitt (31) versehen ist, der an ihrer Oberseite ausgebildet ist und gleitend in der Vorhangsnut (213) der Gleitschiene (21) angebracht ist;
gekennzeichnet durch
eine obere Schiene (10), die eine teleskopisch einstellbare Länge aufweist und mit einer inneren Schiene (11), einer äußeren Schiene (12) und zwei Schienenkanälen (13) versehen ist, die auf der inneren Schiene (11) und der äußeren Schiene (12) jeweils auf derselben Seite angeordnet sind und miteinander in Verbindung stehen, und wobei der Positionierungsblock ferner auf der oberen Schiene (10) befestigt und begrenzt ist; und
eine Vielzahl von Klammern (14), die an deren Oberseite angeordnet sind und von denen jede einen Montageabschnitt (142) aufweist, der auf deren Seitenfläche angeordnet ist, um zwei Tastverschlüsse (15) und einen an den beiden Tastverschlüssen (15) befestigten Vorhangstoff (16) zu befestigen;
wobei der Gleitblock (22) mit einem Sperrstück (221) versehen ist, das sich davon nach unten erstreckt, um ein Ende der Vorhangsnut (213) abzudecken, wobei der Begrenzungsblock (23) mit einer Pufferfeder (231) und einem Schwenkstopper (233) versehen ist, der schwenkbar am distalen Ende des Begrenzungsblocks (23) angebracht ist,
und wobei der Plattenhalteabschnitt durch das Sperrstück (221) und den Schwenkstopper (233) an zwei Enden der Plattennut begrenzt und positioniert wird.

2. Flächenvorhang nach Anspruch 1, wobei entsprechend an der Oberseite der inneren Schiene (11) und der Oberseite der äußeren Schiene (12) ein Schnappabschnitt (111, 121) ausgebildet ist; die Klammer (14) mit einem Verriegelungsabschnitt (141) und dem Montageabschnitt (142) versehen ist, die sich vertikal von ihrem vorderen Ende aus erstrecken; der Montageabschnitt (142) so ausgebildet ist, daß zwei Begrenzungskanäle (143) entsprechend an der oberen und unteren Vorderseite zur Begrenzung und Positionierung der beiden Tastverschlüsse (15) angeordnet sind.

3. Flächenvorhang nach Anspruch 1, wobei der Positionierungsblock (26) mit einem Gleitblock (22) versehen ist, der entsprechend im Schienenkanal (42) der oberen Schiene (10) gleitend angebracht ist, und mit einem Dichtungsstück (262), das auf dem Verriegelungsgleitabschnitt (261) so angeordnet ist, dass das Dichtungsstück (262) der Öffnung des Schienenkanals (13) zugewandt ist; das Dichtungsstück (262) wird in Kombination mit einem Befestigungselement (263) verwendet und durch Verschrauben des Befestigungselements (263) kraftschlüssig befestigt.

4. Flächenvorhang nach Anspruch 1, wobei an dem jeweiligen Gleitblock (22) ein Einsteckloch (243) derart angeordnet ist, dass das Einsteckloch (243) der Öffnung des Schienenkanals (42) zugewandt ist; das Einsteckloch (243) wird in Kombination mit einem Verbindungsstück (25) zum Verbinden von mindestens zwei Verbindungsgleitblöcken (24) verwendet und ermöglicht das Verbinden von mindestens zwei Gleitschienen (21).

5. Flächenvorhang nach Anspruch 4, wobei das Verbindungsteil (25) mit mindestens zwei Stiften versehen ist, die den Verbindungsgleitblock (24) entsprechen.

6. Flächenvorhang nach Anspruch 1, wobei der Gleitblock (22) mit zwei symmetrischen Begrenzungsstücken (222) versehen ist, die der Begrenzungsnut (212) der benachbarten Gleitschiene (21) zugewandt sind.

7. Flächenvorhang nach Anspruch 1, wobei der Flächenvorhang zwei Schienensätze (20) aufweist, die entsprechend am äußersten Ende der inneren Schiene (11) und am äußersten Ende der äußeren Schiene (12) angebracht sind und so miteinander verbunden sind, dass sie während des Gebrauchs zum Schließen aufeinander zu und zum Öffnen voneinander weg bewegt werden können.

8. Flächenvorhang nach Anspruch 7, wobei die Gleitschienen (21) der beiden Schienensätze (20) nicht ausgerichtet sind und ein Spalt dazwischen gebildet wird, so dass die beiden Schienensätze (20) versetzt sind, um den Flächenvorhang zu schließen, wenn die ersten Gleitschienen (21) davon gegeneinander gelehnt sind; eine Versetzungsfeder (27) ist am vorderen Ende der Gleitschiene (21) angeordnet, die sich an der Innenseite befindet, um die beiden Gleitschienen (21) in dem versetzten Zustand zu halten, wenn die Schienensätze (20) versetzt sind.

9. Flächenvorhang nach Anspruch 1, wobei die obere Schiene (10) in Kombination mit einer Schnur (17) zum Gleiten und Bewegen des Schienensatzes (20) verwendet wird.

Revendications

1. Panneau japonais comprenant :

au moins un ensemble de rails (20) qui inclut une pluralité de rails coulissants parallèles (21) chacun d'eux présentant une rainure de positionnement (211) et une rainure de limitation (212) disposée sur deux surfaces latérales de ceux-ci, respectivement, et en correspondance l'une par rapport à l'autre, une rainure de panneau (213) agencée au niveau de la partie inférieure de ceux-ci, et une entretoise (214) disposée sur la partie supérieure de ceux-ci et dotée d'une pluralité de perforations à intervalles ;
un bloc coulissant (22) qui est fixé sur l'extrémité distale de la rainure de positionnement (211) de chaque rail coulissant (21), et monté de manière coulissante dans la rainure de limitation (212) du rail coulissant adjacent (21) ;
un bloc de limitation (23) qui est disposé sur l'extrémité avant de la rainure de limitation (212) de chaque rail coulissant (21) ;
un bloc coulissant de liaison (24) monté sur l'extrémité avant de l'entretoise (214) de chaque rail coulissant (21) et doté d'une partie de blocage coulissante (241) et d'une partie de liaison (242) dont la longueur varie en fonction de la position du rail coulissant (21) parmi les rails coulissants (21) en parallèle pour fixer le bloc coulissant de liaison (24) sur l'entretoise (214) du rail coulissant correspondant (21) et permettre aux parties de blocage coulissantes (241) d'être alignées et venir en butée les unes contre les autres ;
le rail coulissant (21) est en outre doté du bloc coulissant de liaison le plus en avant (24) qui inclut une partie d'attache de cordelette (244) ;
le rail coulissant (21) qui est défini comme étant le dernier selon l'agencement séquentiel est en outre doté d'un bloc de positionnement (26) qui est agencé à l'extrémité distale de l'entretoise (214) de celui-ci ; et
une pluralité de panneaux (30) chacun d'eux étant doté d'une partie de retenue de panneau (31) qui est formée sur la partie supérieure de ceux-ci et montée de manière coulissante dans la rainure de panneau (213) du rail coulissant (21),
caractérisé par une glissière supérieure (10) présentant une longueur ajustable de manière télescopique et dotée d'une glissière interne (11), d'une glissière externe (12) et de deux profilés de rails (13) disposés sur la glissière interne (11) et la glissière externe (12), respectivement du même côté et communiquant l'un avec l'autre, et le bloc de positionnement est en outre fixé et limité sur la glissière supérieure (10) ; et une pluralité d'attaches (14) agencées sur la partie supérieure de ceux-ci et chacune d'elles inclut une partie de montage (142) disposée sur la surface latérale de celles-ci pour fixer deux éléments de fixation par contact (15) et un tissu de panneau japonais (16) apposé sur les deux éléments de fixation par contact (15) ;
dans lequel le bloc coulissant (22) est doté d'une pièce formant obstacle (221) s'étendant vers le bas depuis celui-ci pour recouvrir une extrémité de la rainure de panneau (213),
dans lequel le bloc de limitation (23) est doté d'un ressort amortisseur (231) et d'une butée orientable (233) qui est montée pivotante sur l'extrémité distale du bloc de limitation (23),
et dans lequel la partie de retenue de panneau est limitée et positionnée par la pièce formant obstacle (221) et la butée orientable (233) sur deux extrémités de la rainure de panneau, respectivement.

2. Panneau japonais selon la revendication 1, dans lequel une partie fixée par pression (111, 121) est formée sur la partie supérieure de la glissière interne (11) et sur la partie supérieure de la glissière externe (12), respectivement ; l'attache (14) est dotée d'une partie de blocage (141) et de la partie de montage (142) s'étendant verticalement depuis l'extrémité avant de celle-ci ; la partie de montage (142) est formée de telle manière que deux profilés de limitation (143) sont agencés de manière correspondante sur les côtés avant supérieur et inférieur pour limiter et positionner les deux éléments de fixation par contact (15).

3. Panneau japonais selon la revendication 1, dans lequel le bloc de positionnement (26) est doté d'une partie de blocage coulissante (22) montée de manière coulissante dans le profilé de rail (42) sur la glissière supérieure (10) de manière correspondante, et une cale (262) disposée sur la partie de blocage coulissante (261) de telle manière que la cale (262) soit tournée vers l'ouverture du profilé de rail (13) ; la cale (262) est utilisée en association avec un élément de fixation (263) et bloquée par friction par vissage de l'élément de fixation (263).

4. Panneau japonais selon la revendication 1, dans lequel un trou d'insertion (243) est agencé au niveau du bloc coulissant de liaison respectif (22) de telle manière que le trou d'insertion (243) soit tourné vers l'ouverture du profilé de rail (42) ; le trou d'insertion (243) est utilisé en association avec une pièce de

jonction (25) pour relier au moins deux blocs coulissants de liaison (24) et permettre à au moins deux rails coulissants (21) d'être joints.

5. Panneau japonais selon la revendication 4, dans lequel la pièce de jonction (25) est dotée d'au moins deux broches correspondant aux blocs coulissants de liaison (24).

6. Panneau japonais selon la revendication 1, dans lequel le bloc coulissant (22) est doté de deux pièces de limitation symétriques (222) tournées vers la rainure de limitation (212) du rail coulissant adjacent (21).

7. Panneau japonais selon la revendication 1, dans lequel le panneau japonais inclut deux ensembles de rails (20) qui sont montés sur l'extrémité la plus externe de la glissière interne (11) et l'extrémité la plus externe de la glissière externe (12), respectivement, et joints pour être rapprochés l'un de l'autre pour la fermeture et éloignés l'un de l'autre pour l'ouverture en utilisation.

8. Panneau japonais selon la revendication 7, dans lequel les rails coulissants (21) des deux ensembles de rails (20) ne sont pas alignés et un interstice est formé entre eux de sorte que les deux ensembles de rails (20) soient décalés pour fermer le panneau japonais lorsque les premiers rails coulissants (21) de ceux-ci reposent l'un contre l'autre ; un ressort de décalage (27) est agencé à l'extrémité avant du rail coulissant (21) situé du côté intérieur pour garder les deux rails coulissants (21) dans l'état décalé lorsque les ensembles coulissants (20) sont décalés.

9. Panneau japonais selon la revendication 1, dans lequel la glissière supérieure (10) est utilisée en association avec une cordelette (17) pour faire coulisser et déplacer l'ensemble de rails (20).

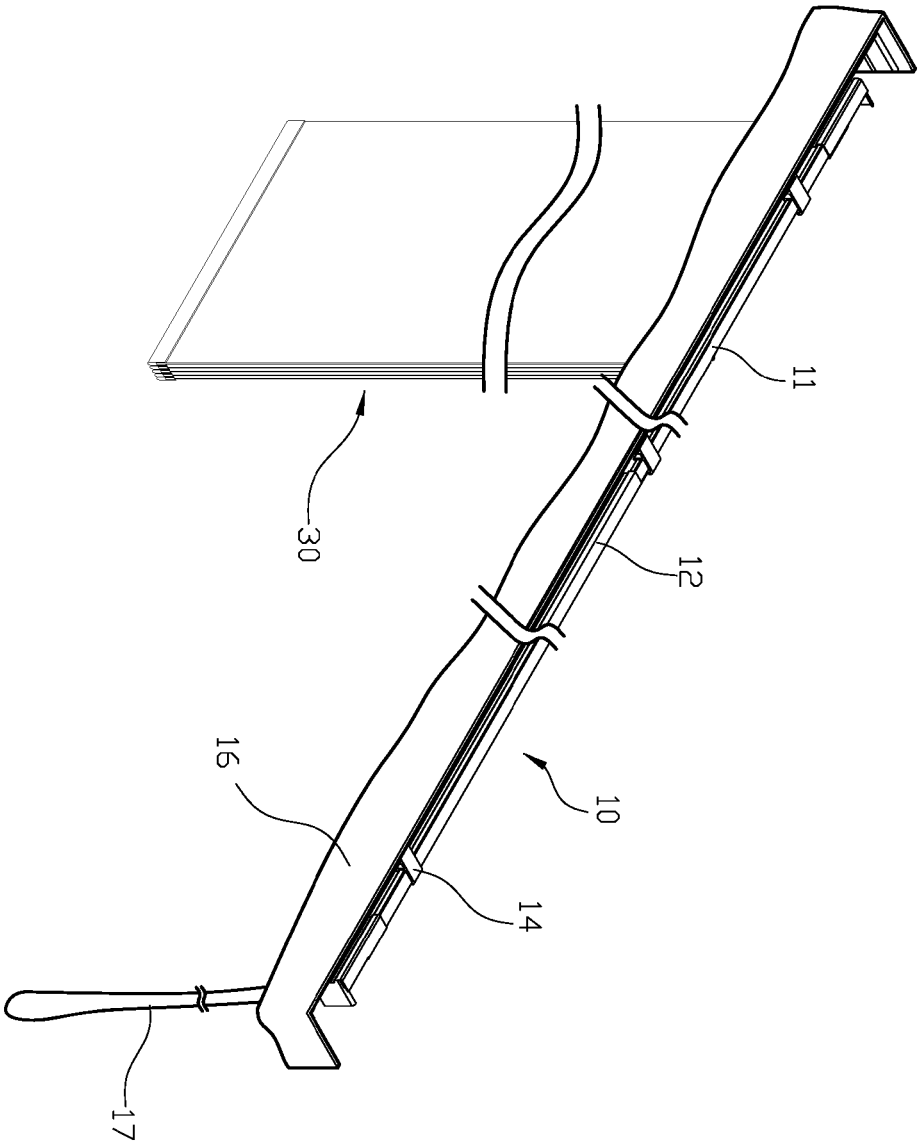
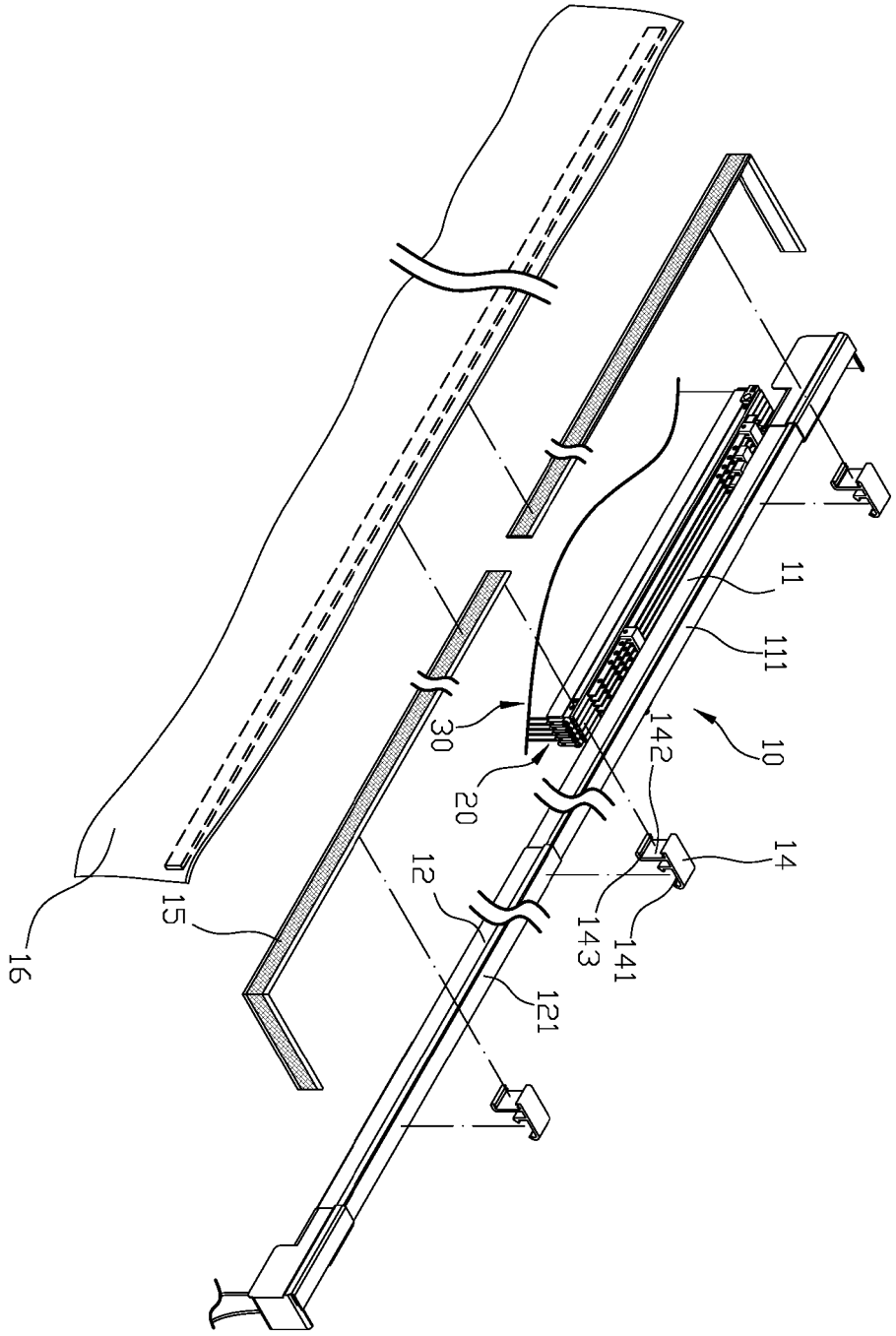


FIG. 1

FIG. 2



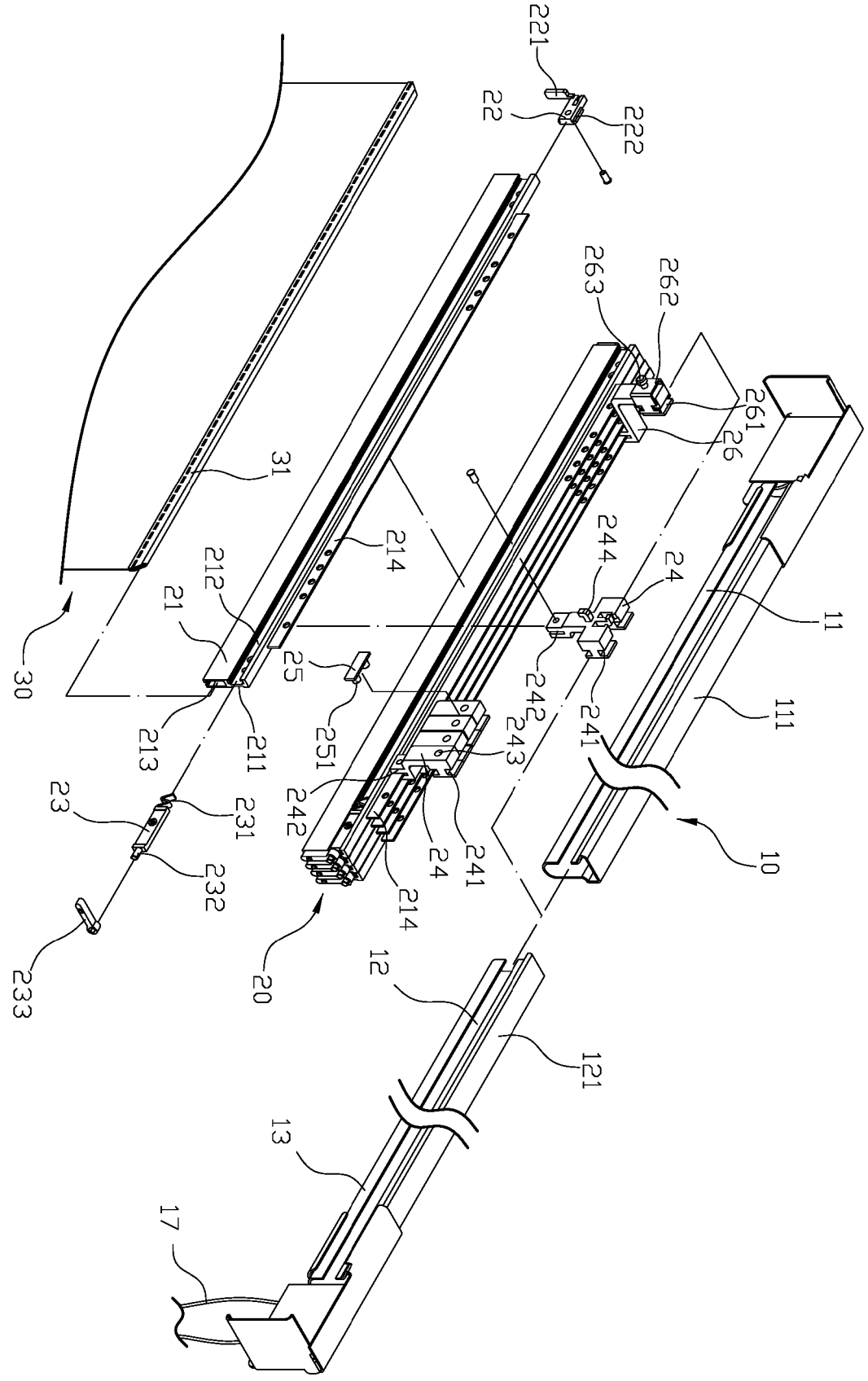

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FIG. 3

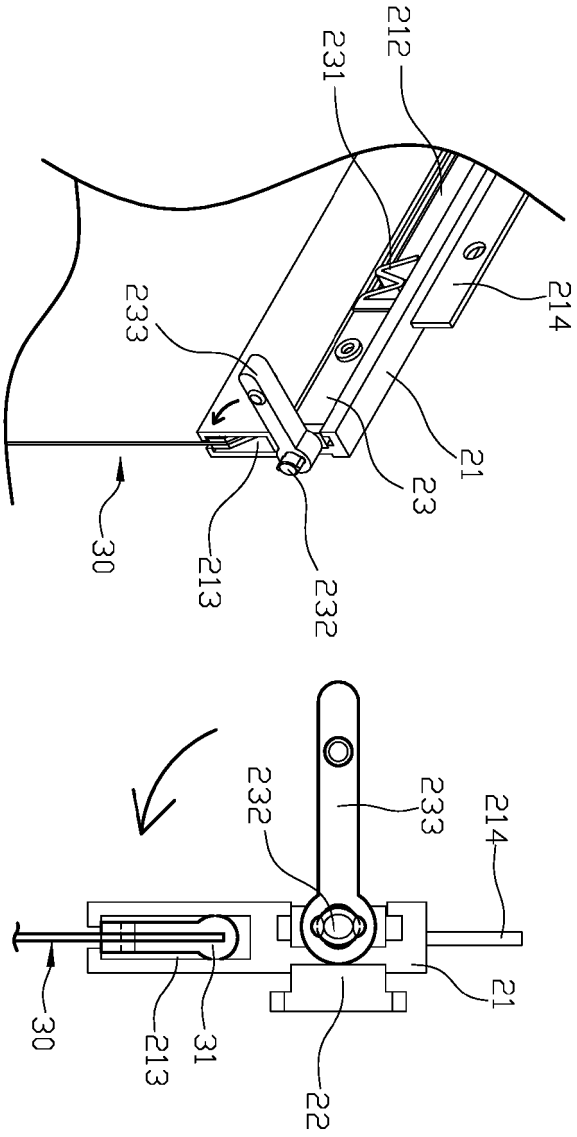

FIG. 4

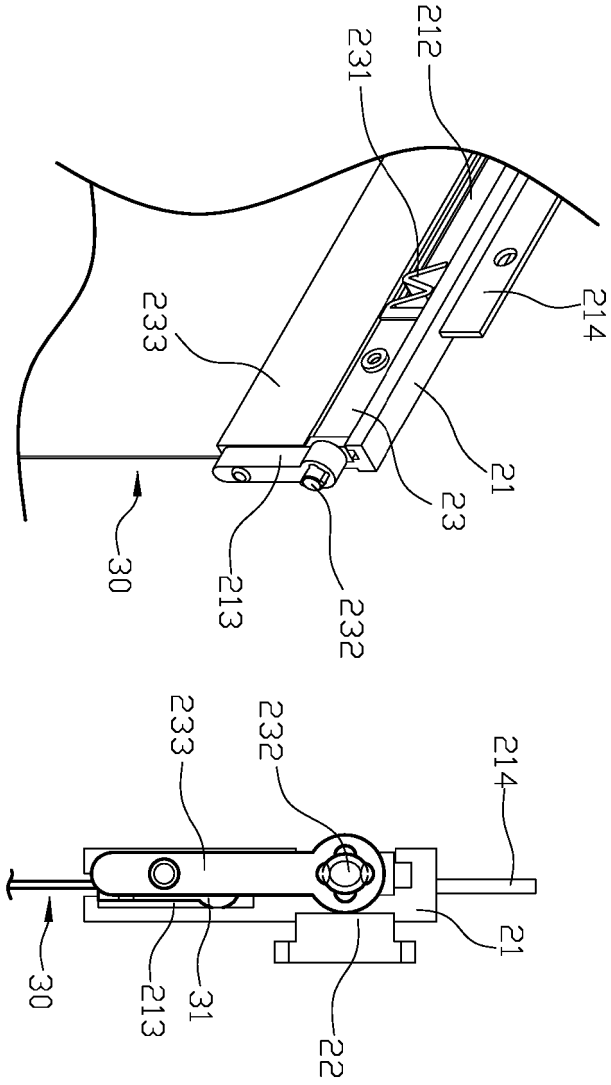

FIG. 5

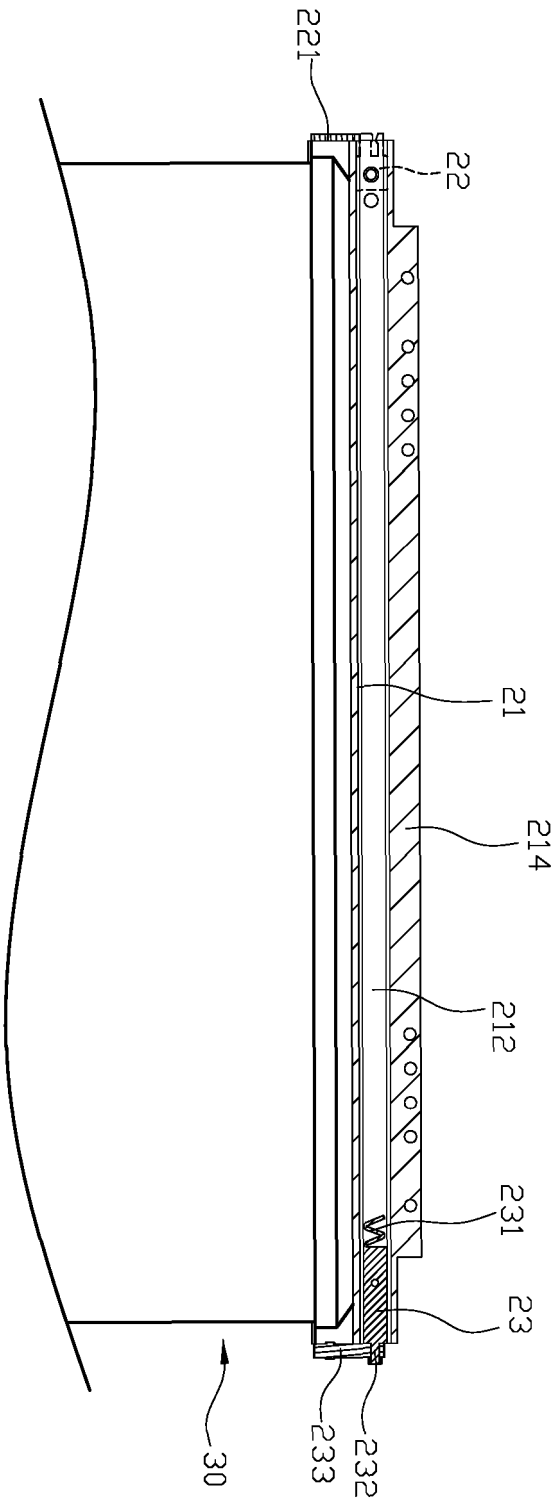

FIG. 6

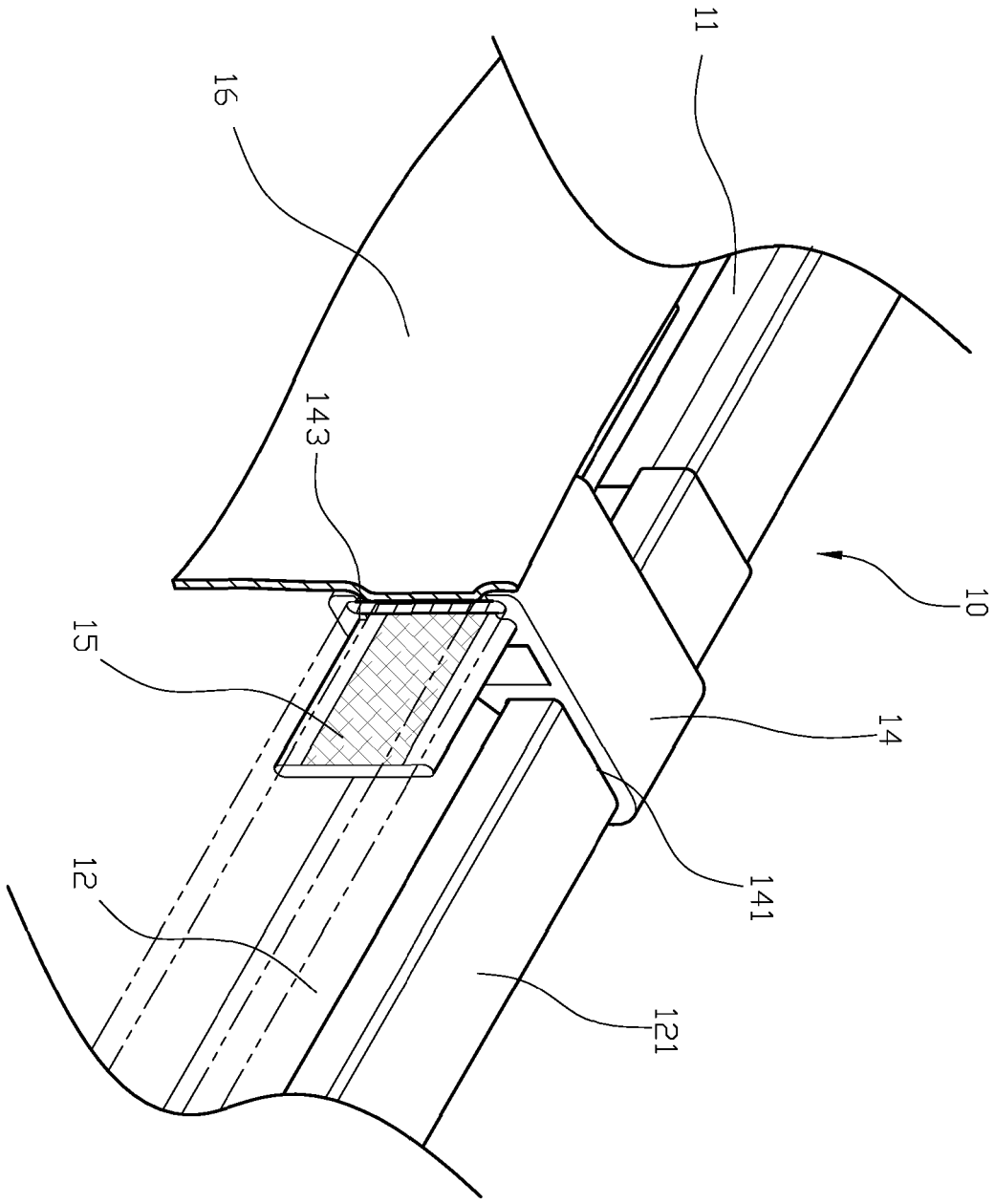

FIG. 7

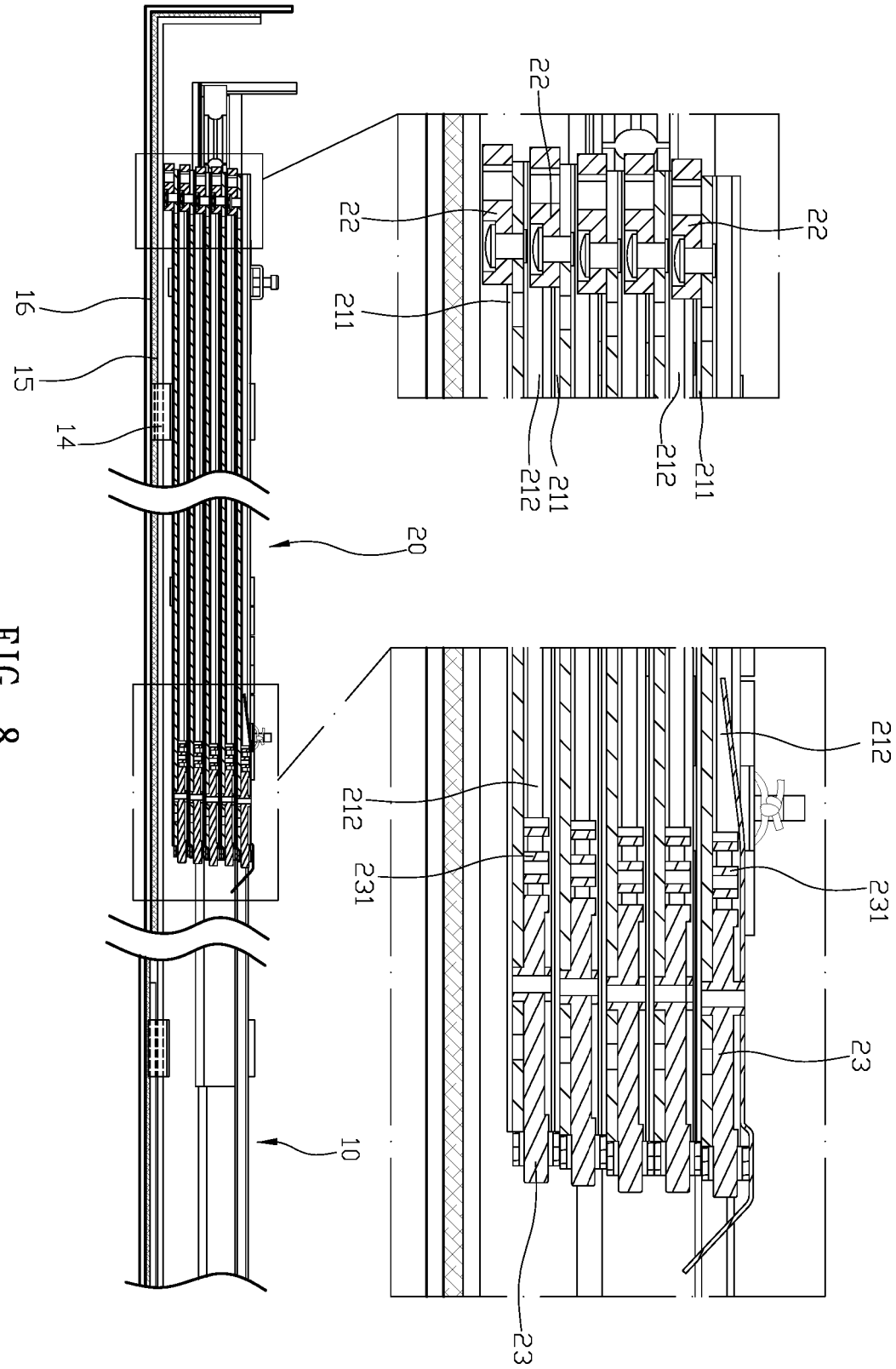

FIG. 8

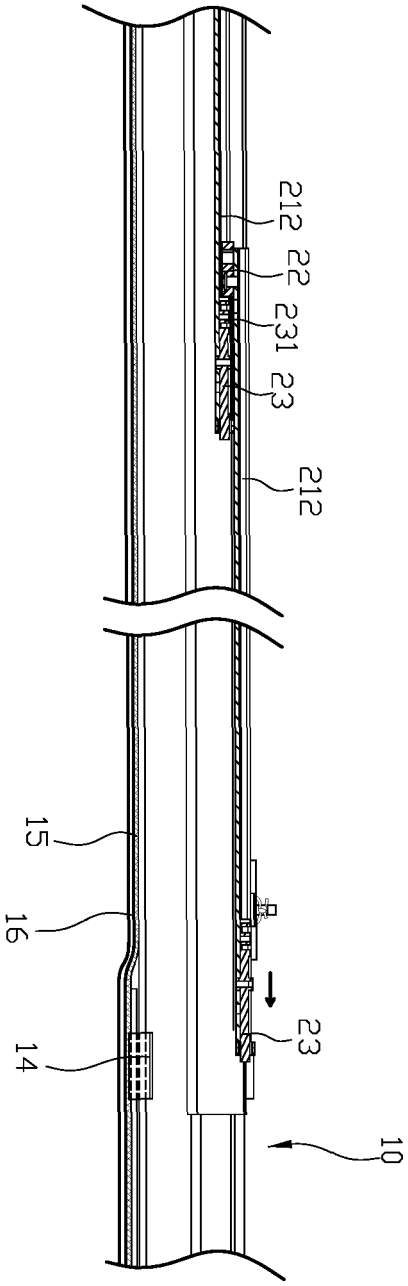

FIG. 9

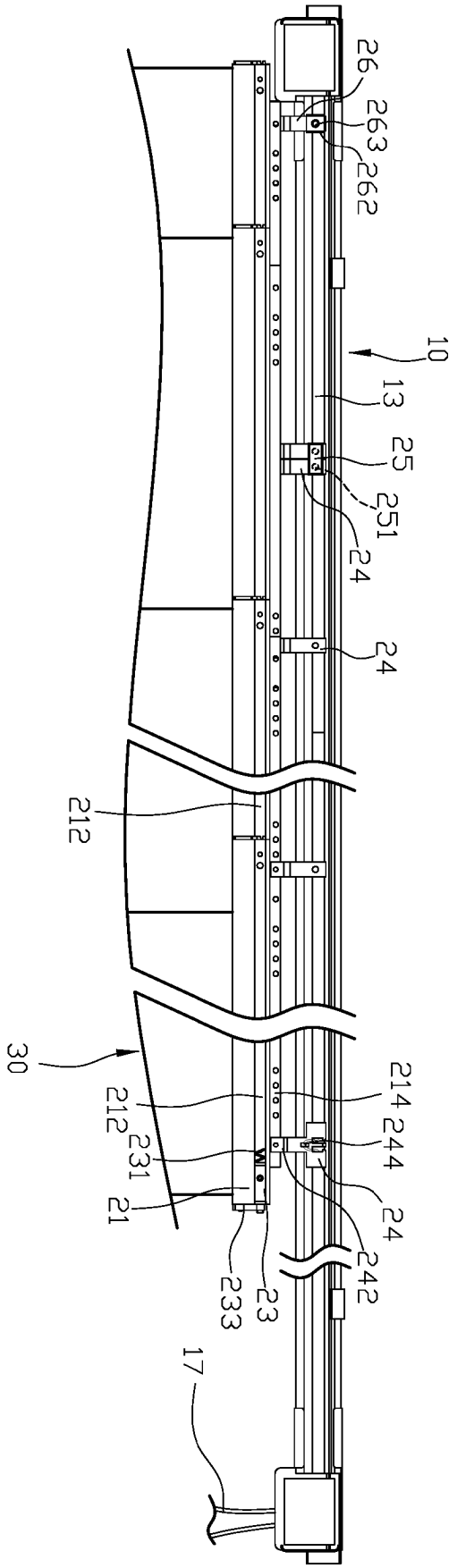
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FIG. 10

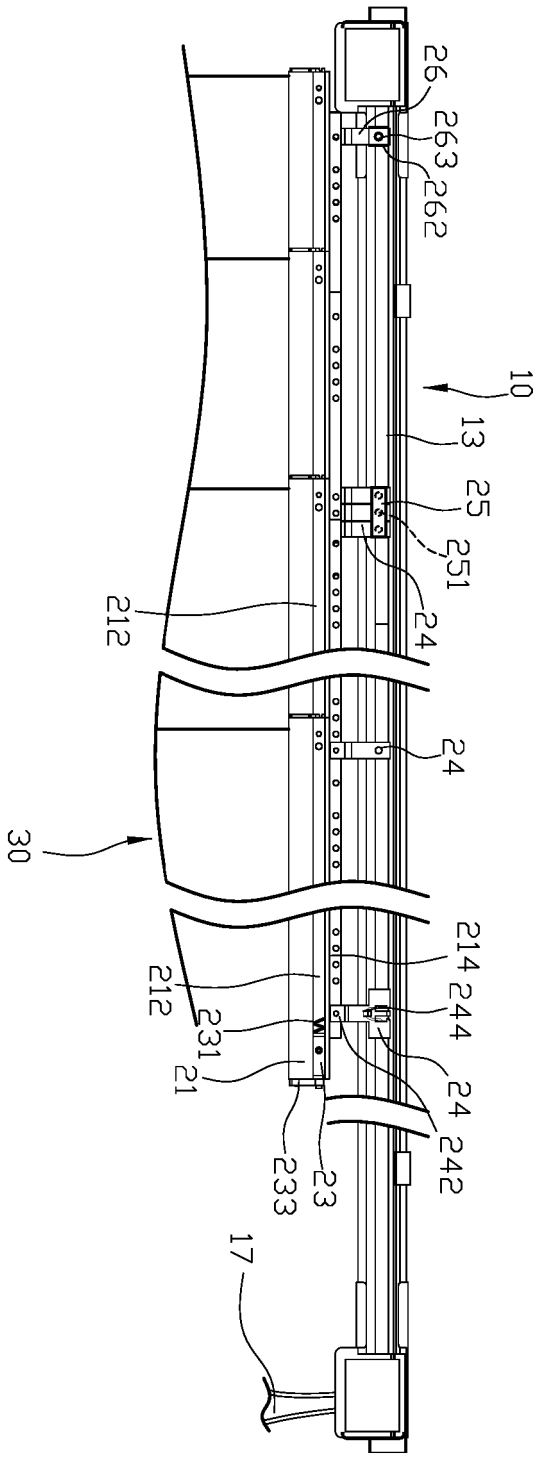
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FIG. 11

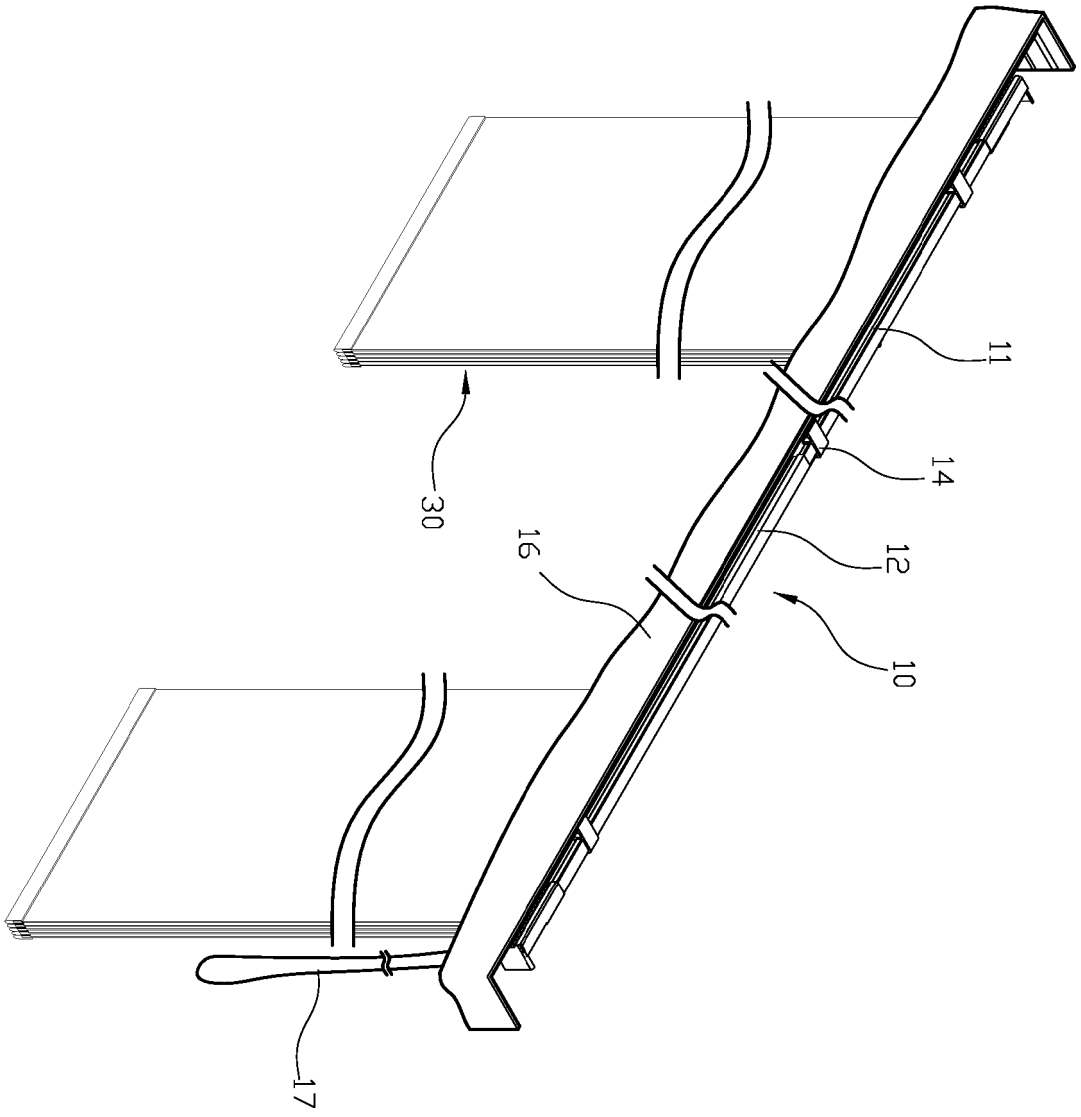
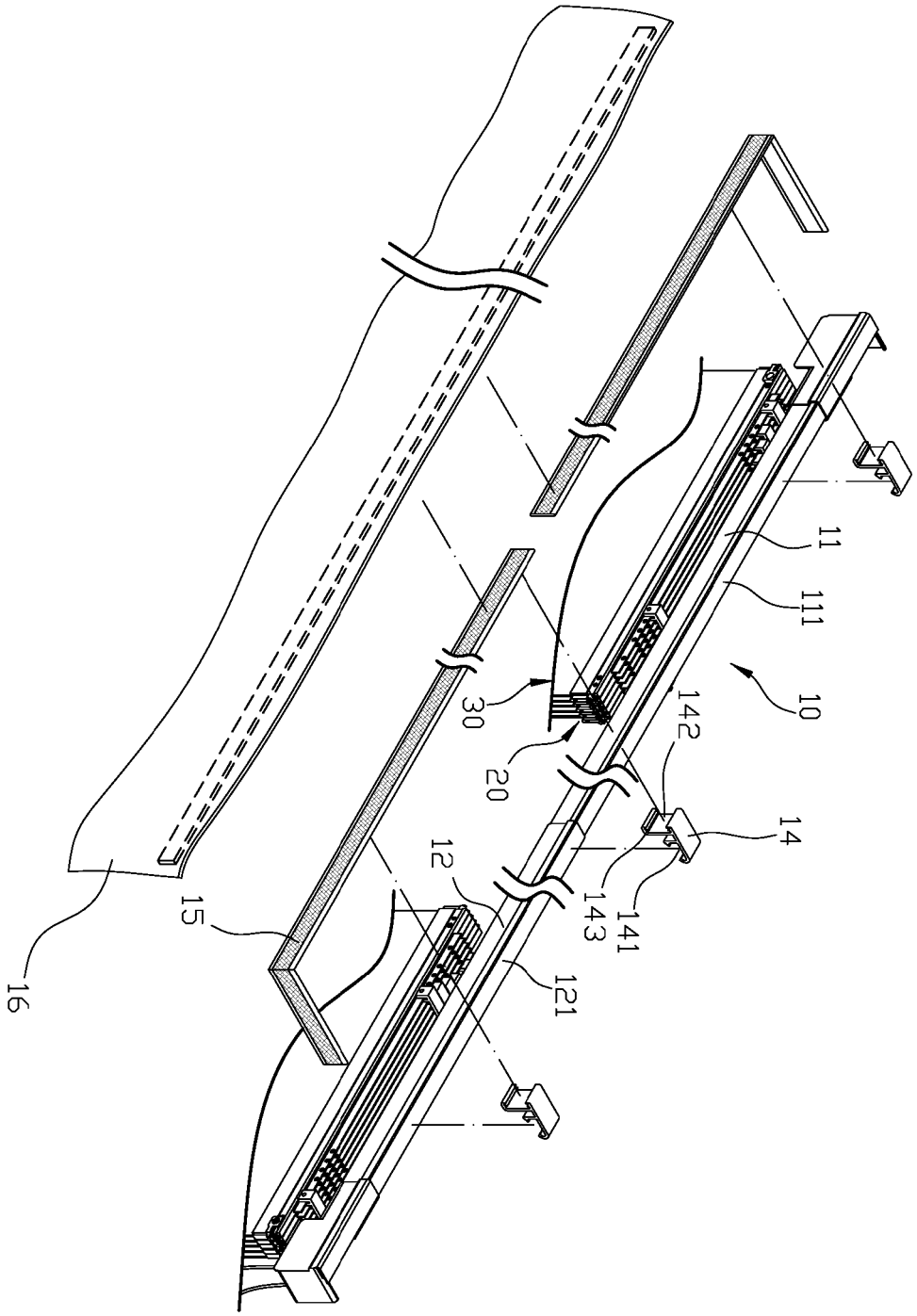


FIG. 12

FIG. 13



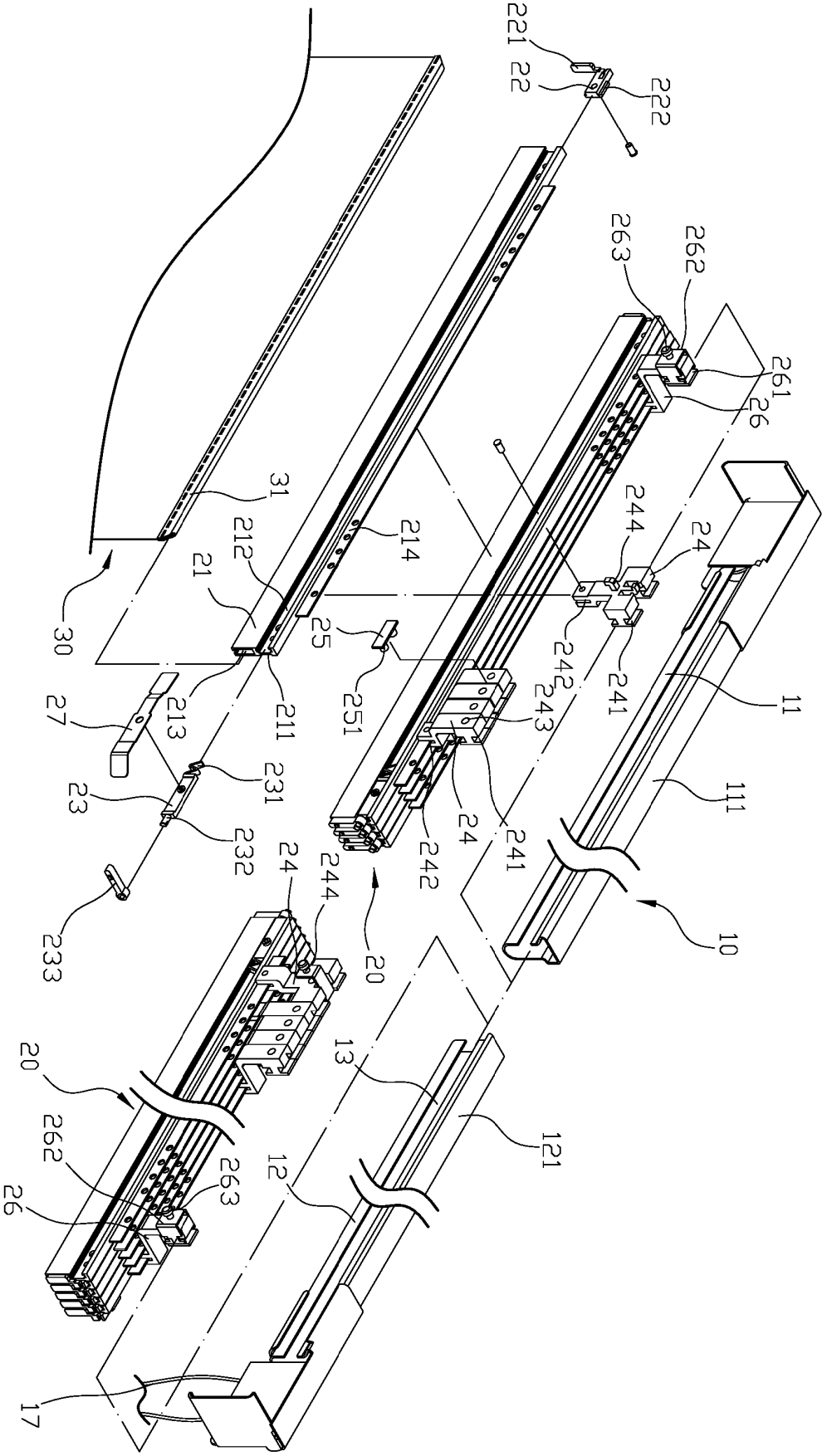

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FIG. 14

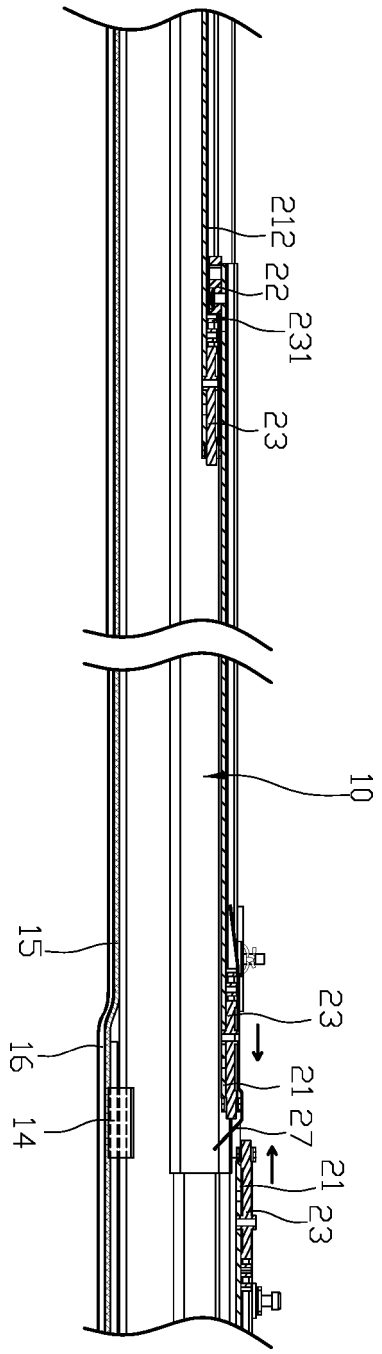

FIG. 15

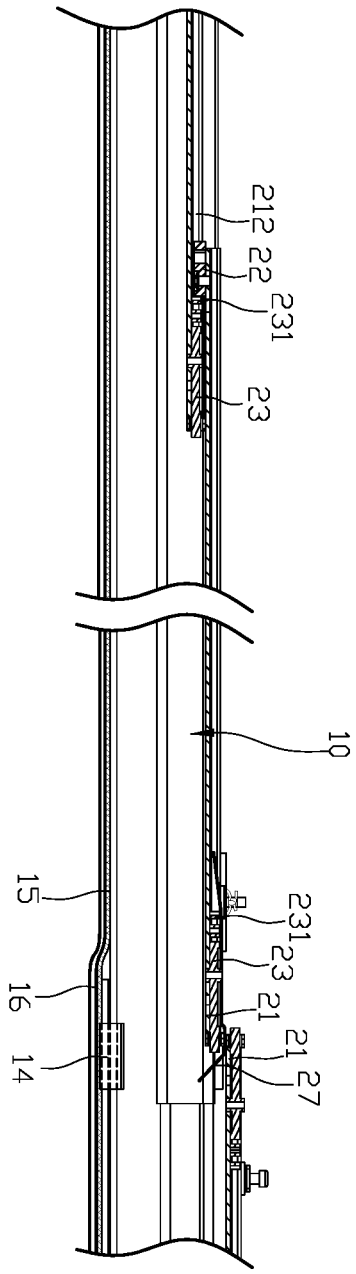

FIG. 16

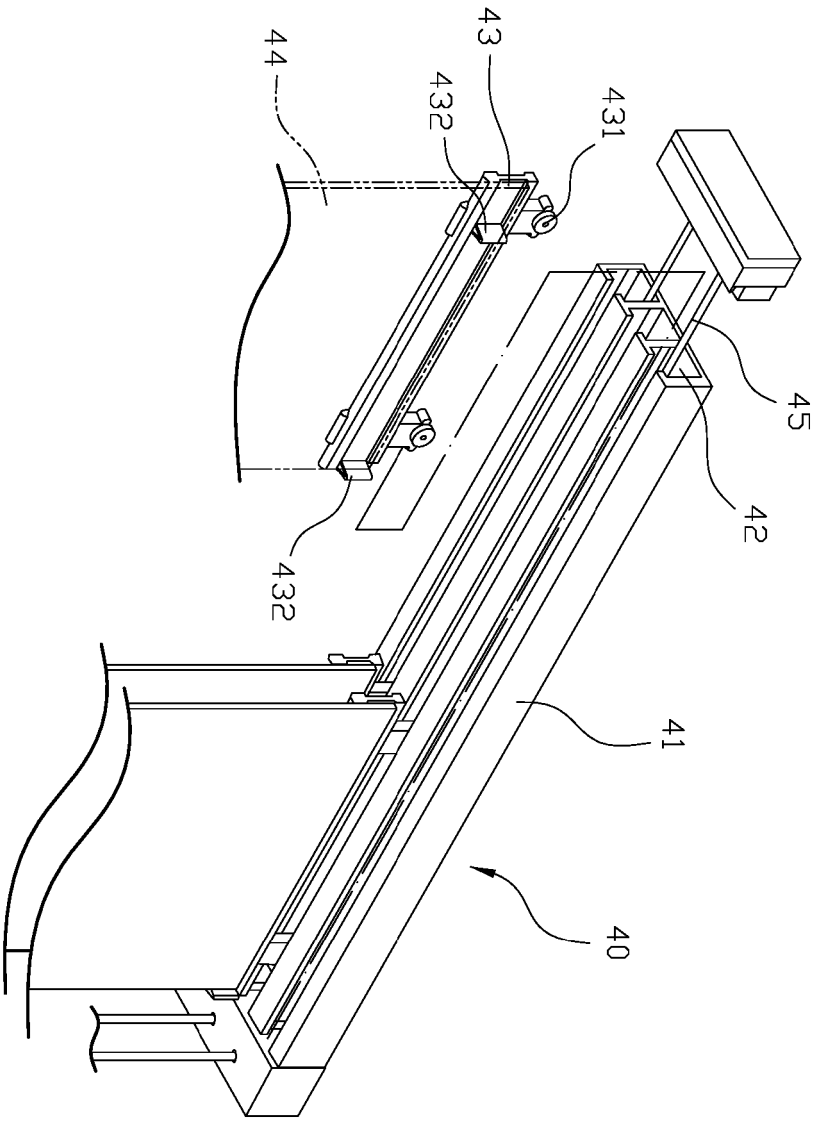

FIG. 17
PRIOR ART

REFERENCES CITED IN THE DESCRIPTION

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